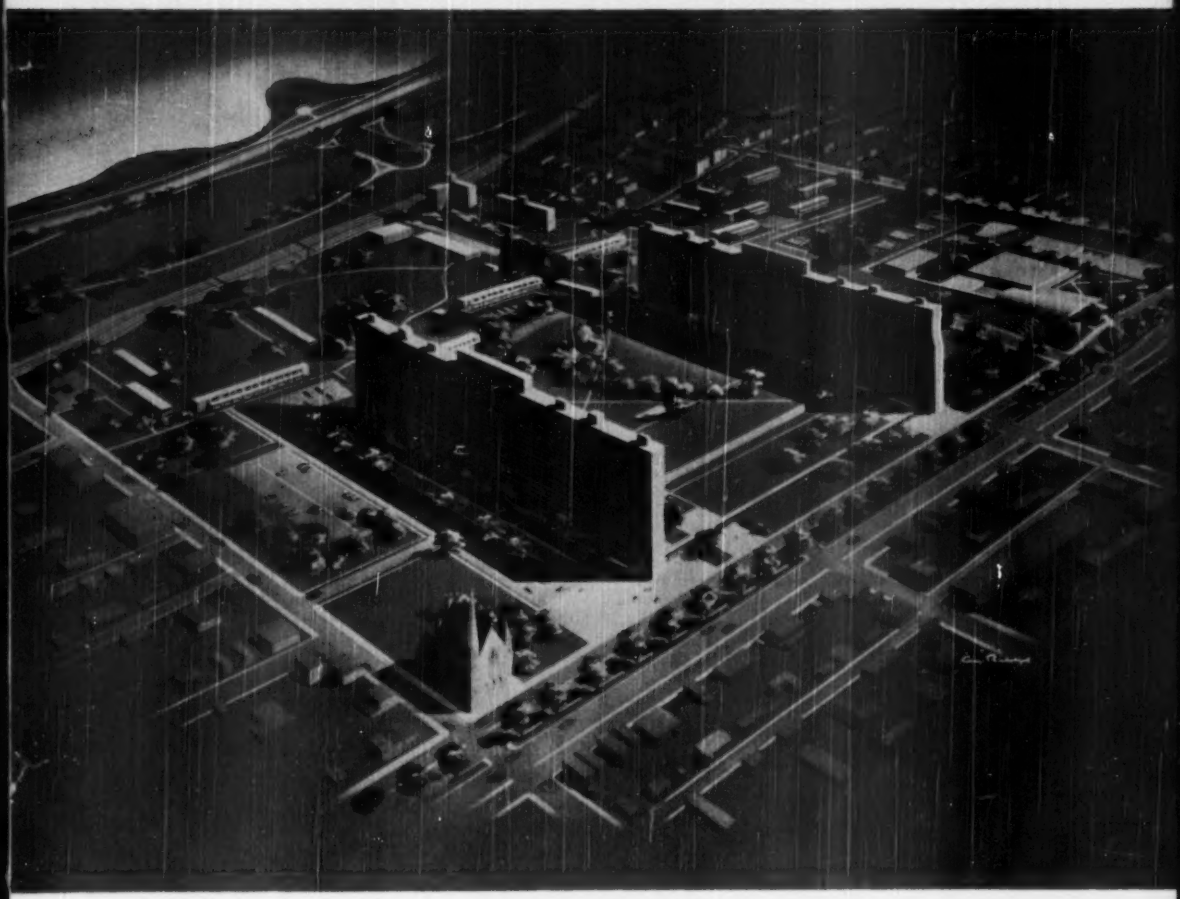
# The American City



**Artist's View of Chicago's Proposed Urban Redevelopment Project Number One**

UPON APPROVAL by the City Council, this residential community for 1,400 families in the heart of Chicago's blighted South Side area is to be built, owned and managed by the New York Life Insurance Company. In the two 23-story buildings of striking modern design, every apartment will have through ventilation. The plan, as approved by the Chicago Land Clearance Commission, includes also a number of 2-story garden apartments and a large shopping center.

*(See article on page 118 this issue)*

# 1,500,000 sq. yds. of Texaco for Louisville streets

Main Street, Louisville

Chestnut Street, Louisville

## . . . including important thoroughfares like these!

Algonquin Parkway, Louisville

Third Street (US 60), Louisville

Contractors who have paved Louisville streets with Texaco Asphalt include the Andrews-Collings Asphalt Paving Company, Henry Bickel Company, Breslin Construction Company, Geo. M. Eady Company, Louisville Asphalt Company, H. K. Williams. Part of the Texaco **Asphalt paving on Louisville** streets was laid by city forces.

In 1948, streets of Louisville, Ky., were paved with 500,000 square yards of resilient, heavy-duty Texaco Asphaltic Concrete paving. Another half-million square yards of Texaco was laid in 1949, and the same yardage will be constructed again this year. Much of this paving serves the most heavily traveled streets in Louisville.

Clearly, the city of Louisville is well satisfied with the performance of Texaco Asphalt paving. So are more than 1500 other representative cities. Because it is resilient, Asphaltic Concrete absorbs impact, assuring long service with low upkeep. It is immune to chemicals used for snow and ice removal in winter. Its skid-resistant texture contributes greatly to safe driving. Absence of joints prolongs the smooth riding quality of Asphaltic Concrete and keeps maintenance down.

Municipal officials desiring full information about Texaco Asphaltic Concrete and other types of asphalt construction for city streets can secure copies of two helpful booklets on the subject by writing our nearest office.

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Boston 16 Chicago 4 Denver 1 Houston 1 Jacksonville 2 Philadelphia 2 Richmond 19

TEXACO

REG. T.M.

# TEXACO ASPHALT

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# The American City

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**THE MUNICIPAL INDEX and ATLAS, used in connection with the current advertisements in THE AMERICAN CITY, places officials in the most favorable position to obtain all types of available equipment and supplies from manufacturers who desire to serve municipal government departments. This 835-page annual is published by The American City Magazine Corporation, 470 Fourth Ave., New York 16, N. Y.**



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# BIGGER BARGAIN

The telephone takes a smaller part of the family budget than in 1939...

One of the attractive and remarkable things about telephone service is its low price.

It actually takes a smaller part of the family budget than it did ten or eleven years ago. That's because the average family income has increased much more than the increase in telephone rates. Even though increases in telephone rates are still needed to catch up with past increases in costs, your telephone will continue to be a big bargain. The increases so far, plus those now requested, average only a penny or so per call.

At the same time, there has been a big increase in the value of the telephone. On the average, you can now call more than twice as many telephones in your local area as in 1939.

BELL TELEPHONE SYSTEM

# Our Municipal Notebook

## When Low Taxes Repelled an Industry

INSTEAD of serving as an inducement, the offer of a low tax assessment by a Tennessee city to a Northern manufacturer seeking a branch-plant location in the South boomeranged and was actually cited as a major reason by the manufacturer why the city failed to get the new industry. The case is reported in the June 1 *Newsletter* of the Industrial Development Division, Tennessee State Planning Commission,* and again focuses attention on the fact that "a city in order to be attractive to industry, must first be attractive in itself."

Under the city's discredited offer, county taxes to the manufacturer would have been only $440 annually, whereas the city ranking second on the company list placed taxes at $46,000, and the fourth city on the list put taxes at $75,000. The company officials indicated that they desired to carry a fair tax load, otherwise "they did not see how the community could furnish proper schools, recreation, sewers, and city services for their employees."

The company also considered the city wholly lacking in recreational facilities—there was no adequate park and no municipal golf course. The only recreation offered in the city, as the company saw it, "consisted of a picture show and poolrooms." The city also ranked low on educational facilities. The company said it wanted the best school facilities for the children of its employees.

Apparent lack of community pride was reflected in the number of homes in the city that needed painting and many business houses that "were old and not of good appearance." The company specifically pointed to Negro slums about which no one seemed concerned, even though they were practically in the business district.

Also cited as disadvantages by the manufacturer were: inability to reach the city directly by air because no airline stopped there; the absence of a first-class dining room in the city, and somewhat higher fuel costs.

That the city was not by any means considered to be hopeless is indicated by the fact that the manufacturer ranked it third of a total of 55 that were investigated as possibilities for his particular operation. But the city's experience should hold a few lessons for other communities that may want to grant public concessions to attract new industry without first making a thorough diagnosis and honestly facing up to their shortcomings as places to live and work.

* George I. Whitlatch, Editor. Published at 417 Seventh Ave. North, Nashville 3, Tenn.

## *State-City Relationships in Education—A Look Ahead*

"IF PRESENT trends continue, we may expect the states' role in education to grow in importance," writes Walter D. Cocking, Chairman, Board of Editors, *The School Executive*, "there is little question that they must use their broad powers over taxation to provide a larger share for school revenues."

Discussing "The Role of the States in Education," in the Mid-Century Issue (June 1950) of *State Government*, Dr. Cocking concludes:

> What we should hope for, it seems to me, is that the states and local school units will develop a closer partnership in school affairs without supremacy of the state over the local unit . . . . The hope of America with respect to its schools lies fundamentally in local or community determination of their purposes and programs.
>
> It is important, then, to consider how the increasing role of the states in education can operate and at the same time avoid the dangers of extreme control. I see four chief functions at the state level: leadership, planning, service, and research. Regulatory functions should be kept to a minimum, and every effort be made to eliminate them whenever possible.
>
> If the states will proceed to exert their utmost efforts to provide top leadership, wise cooperative planning, efficient service, and if they stimulate and carry on needed research, they will provide the functions which education needs at the state level, while avoiding the dangers of extreme centralization and bureaucracy. Thus, the principle of local control of schools will be maintained, with the active partnership of state level support and assistance.

## *Cambridge Plan Outlines Local Defense Measures*

A SUBSTANTIAL contribution to the mobilization of local activity on civil defense organization has been made by the Massachusetts Mayors' Association through its distribution to all mayors of U. S. cities with more than 100,000 population of the "Cambridge Plan" for disaster preparedness.

The lack of civil defense organization plans, strikingly evident since the Korean outbreak, plus the fact that little information on local civil defense problems is yet available from the National Security Resources Board, has made the Cambridge program, headed by Dr. Walter L. Cronin, disaster relief coordinator, particularly important. City Manager John B. Atkinson directed Dr. Cronin to make the study many months ago.

The "Cambridge Plan," a printed guide for establishment of local civil defense organizations, is available free upon request by municipalities to Mayor William P. Grant, President, Massachusetts Mayors' Association, City Hall, Fall River, Mass.

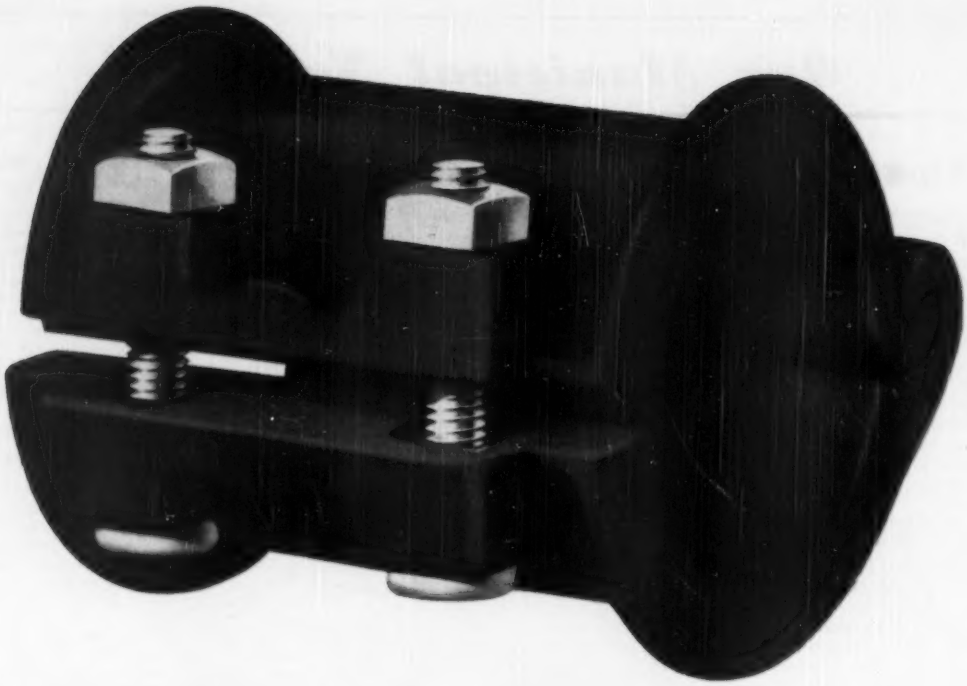
## *The American City Quiz*

### Match Wits with the Experts

QUESTIONS

1. ***Where should one locate master meters which are used in water supply?***
2. ***What protective measures afford effective protection to water-pumping stations against air bombardment?***
3. ***How many cities use the sanitary landfill for refuse disposal?***
4. ***What evidence does a police officer need to prove that a driver is drunk?***
5. ***How should the settling tanks and aeration tanks in sewage-treatment plants be painted to insure long life?***
6. ***What is the cost of an aerial survey over the metropolitan area of a large city?***
7. ***What are the fundamentals of a good municipal report on a sewage-treatment plant?***
8. ***How many calls can an average three-man refuse crew make in a day?***
9. ***What should the ratio be between the water rate charged to industry and that charged to residential areas?***
10. ***Can sprays control the Dutch Elm blight, which has spoiled so many elm trees?***

(Answers on page 9)



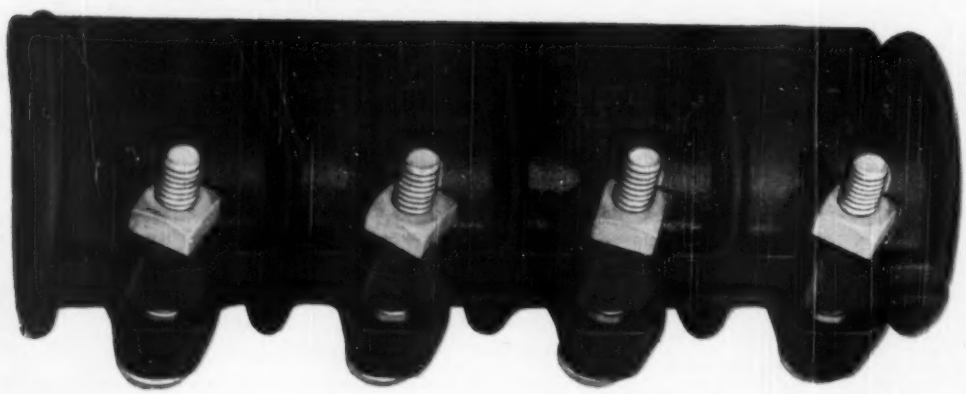
# EMERGENCY PIPE CLAMP

## SKINNER-SEAL

# PIPE LINE CLAMP

**Standard of the industry for over half a century. At the time of placing this advertisement these clamps were in stock in a pretty general run of sizes. However we still advise placing orders as far in advance as possible.**

**M. B. SKINNER COMPANY**
**SOUTH BEND 21, INDIANA, U. S. A.**



# Government Functions Expand In Los Angeles County

THE growth and development of a unique form of county organization —that of Los Angeles County—was traced by Mr. Harold J. Ostly in a speech on city-county relationships presented to the Southern California Planning Congress, which met at Long Beach in June. He urged that increasing attention be given to the elimination of duplication in city and county services, and ultimate establishment of an efficient regional government.

Mr. Ostly pointed out how the special-district device has grown as an arm of the Los Angeles county-government structure, necessitated by the growth of areas where residents have refused to incorporate or annex to existing municipalities.

From this growth and development of the county, a new situation arose. There were many functions carried out by the county which were in effect duplicated by the municipalities, such as assessment of property for taxation and the collection of taxes. Mr. Ostley declared:

It was but a short step then for various cities to avail themselves of the County Assessor's assessment-roll figures and the Tax Collector's service in handling city collections. Today there are forty-two cities using this service. All municipalities except Pasadena, Long Beach, and Arcadia are now using county assessment figures for their tax levy. . . .

Some of the other working relationships which have proven to be profitable not only to the municipalities but to the taxpayers of the county as a whole are:

COUNTY HEALTH DEPARTMENT: Serves the unincorporated territory and is also used on a contractual basis by all the cities with the exception of Los Angeles, Long Beach, Pasadena, Vernon, and Beverly Hills.

BUILDING AND SAFETY: Inspection services are provided to the following six cities: Glendora, Azusa, Claremont, La Verne, Palos Verdes Estates, and Avalon.

CIVIL SERVICE: The County Civil Service Commission performs the service of examinations for five cities: Arcadia, Culver City, Lynwood, Torrance, and Monterey Park, and gives complete service to eight cities, Bell, Gardena, Inglewood, Manhattan Beach, Maywood, Redondo Beach, San Fernando, South Gate, Burbank, and Whittier.

PUBLIC LIBRARY: Twenty cities in the county have elected to become a part of the County Library system.

ROAD DEPARTMENT: The Road Commissioner does street work in four cities by contract, using county employees and equipment and charging each city on a cost basis for work performed.

SURVEYOR-ENGINEER: Thirty-nine of the forty-five cities have contracts under which the Surveyor-Engineer does all subdivision-map checking.

Altogether there are twenty-two county departments which serve cities by contract or because of statute requirements. There are fourteen so-called county departments which serve municipal areas primarily. These are the municipal courts and marshal's office of the seven cities that have municipal courts.

Working city-county relationships (in Mr. Ostly's opinion) do not in themselves present the full solution for the administration of local government in the Los Angeles area. Many functions should, from a cold engineering standpoint be administered on a regional basis disregarding arbitrary political lines. In certain fields, this has been already accomplished locally. Flood Control, the Sanitation District, which operates sewage-disposal facilities, and the Air Pollution Control District are examples. There are, he said, many other municipal problems that can best be handled on a regional basis: health protection, major crime enforcement, fire protection, and water supply.

## *Businessmen to Discusss Urban Problems*

IN the belief that businessmen can play a decisive role in helping their communities solve current knotty problems of overcrowded streets and slum areas, the Chamber of Commerce of the United States has announced the calling of a nationwide Businessmen's Conference on Urban Problems for November 20-21 in Washington.

A similar conference, held in Washington in 1947, attracted nearly 600 persons. The present action is based on the many requests received since then for a repeat performance. Co-sponsors of the conference are the Chamber's Construction-Civic Development and Transportation-Communication Departments, assisted by a special advisory committee of nationally recognized authorities coping with community problems.

## *First "Flyless" Missouri City*

FLIES are giving Mexico, Mo., a wide berth this summer, being regulated to the outskirts along with mosquitos and other insect pests. The reason—a fogging program adopted on a city-wide scale last June. The program makes Mexico the first city in Missouri to acquire, own, and operate a fogging machine for fly-control and health work.

City Manager Peter F. Roan and City Council members decided that Mexico should have such a machine after watching one operate at the State Hospital in Fulton, Mo. The machine, a Todd Insecticidal Fog Applicator, known as "TIFA" for short, dispenses the insecticide in a fog that may be regulated from a half-micron to 60 microns in size. This is from a fine dry fog to a wet fog or even a wet spray. The machine distributes 25 gallons of combined DDT, dichloro-diphenyl and aromatic petroleum per hour. It travels at five miles per hour.

The fogging program covers every street and alley. This application, specified by City Manager Roan, will not damage shrubs, flowers or other vegetation. He does, however, warn outdoor fish-pool owners to change the water immediately after fogging. The application used will carry DDT and chlordane.

Last summer the city tried to keep insects under control by spraying insecticide from the booster tank of a fire-department truck. This proved slow and only partially effective.

**Mexico's fogger goes to work on the fly population.**

## You can't beat McCulloch Chain Saws

# on the ground or in a tree

Clearing a right-of-way through mountainous, heavily wooded country involves almost every kind of sawing—topping, pruning, felling, and bucking. The large utility doing the work shown here is using light-weight McCulloch's for the entire job.

The 5-hp, 49-lb. McCulloch makes quick work of big trees. Its light weight saves time between trees in these hills.



The McCulloch 5-49 is shown here with blade swiveled to bucking position; the 3-25 in the background is limbing.




5-49—20, 30, 40, 50 and 60 inch blades and 20 inch bow. Priced from $385

A McCulloch 3-25 dropped this tree in less than a minute, has plenty of power to fell or buck trees 3 or 4 feet thick.

3-25—18, 24, and 30 inch blades and 15 inch bow. Priced from $295

*All prices f. o. b. Los Angeles*

*The 3-hp McCulloch 3-25 handles easily up in a tree because it weighs only 25 lb., and saws at full power in any position.*

NATIONWIDE SALES AND SERVICE

**McCULLOCH MOTORS**
CORPORATION
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Export Department, 301 Clay Street
San Francisco 11, California, U. S. A.

## *Mayor Milewski Dreams A Swamp and Dump Into Fine Memorial Park*

THREE years ago—at the Buffalo convention of the New York State Conference of Mayors and Other Municipal Officials—Mayor Anthony S. Milewski, of Spring Valley, N. Y., told the editor of THE AMERICAN CITY of an ambitious dream, then partly realized. This involved the transformation of the major liability of that village—an ugly and ill-smelling swamp and dump—into a real community asset, a Veterans' Memorial Park.

Three years later—at the Saratoga Springs meeting of the Mayors' Conference, in June 1950, Mayor Milewski was able to report the realization of his dream, and to bring with him to the convention a motion-picture record of this civic achievement, including some very striking "before and after" views.

The story is told briefly on page 92 of this issue of THE AMERICAN CITY; and Mayor Milewski offers to make the motion picture available at a nominal charge for showings in cities or villages having a similar problem. If the editor may venture an added suggestion: when you arrange for a local showing of this movie, ask the Mayor to come with it—for his enthusiasm, as evidenced at the Saratoga Springs meeting, must have been the vital factor in this notable Spring Valley improvement.

## *Highway Posters Are Barred in New Hampshire*

NEW HAMPSHIRE'S State Highway Commissioner, Frank D. Merrill, has issued an order prohibiting signs and posters from highway rights-of-way throughout the state, reports the June 30 *Newsletter* of the National Highway Users Conference, located in Washington, D. C. The Commissioner's order prohibits any "signs, trademarks, devices or posters," except those erected by the Highway Department or other state agency.

## *Inspecting the Horrors of Local Slum Areas*

THE DAYS when Chambers of Commerce and Manufacturers' Associations refused to recognize the existence of blight and slums in their communities seem, happily, to be rapidly passing. A recent instance is a fact-finding tour in which members of the Newark (N. J.) Chamber of Commerce visited three of the city's slum areas and then typical apartments in the projects of the Newark Housing Authority.

The contact (commented New Jersey's leading newspaper, the *Newark Evening News*) should have removed whatever doubts any of them may have had about the wisdom and the necessity of slum clearance . . . .

What the visitors saw in the slums appalled them. Their president, Elbert E. Husted, said the Chamber is in complete accord with the slum-clearance program, because bad housing menaces the economy of the whole city.

The Chamber's interest in the problem is encouraging. Its initiative in getting first-hand information offers an example to other civic organizations. As many as possible should see both the existing conditions and the improvement that public housing can effect. They will see, too, that public housing cannot do the whole job. There are broad opportunities for private enterprise in housing, and its help is essential if all who need decent shelter are to obtain it at a price they can afford.

## *St. Louis Proceeds With Grade Crossing Elimination*

A THOROUGH comprehensive survey of railroad grade crossings in St. Louis by engineers of the city's Board of Public Service is leading to accelerated action on grade-crossing elimination, according to information furnished by Frank J. McDevitt, president, Board of Public Service.

Five grade crossings along Poplar Street, under ownership of the Missouri Pacific Railroad, will be eliminated in the near future at a cost of $1,250,000. The Bureau of Public Roads and the Missouri State Highway Department will contribute $641,000 as their share of the cost. The City of St. Louis will contribute $225,000, and the remainder will be contributed by the Missouri Pacific and Terminal Railroads.

The Missouri Pacific Railroad, the Frisco Railroad, and the Wabash Railroad have willingly, at their own expense, cooperated with the city in providing additional protection for pedestrians and vehicles by modernizing the type of signals used at certain grade crossings. Some of these installations were made prior to the publication of the Board of Public Service survey and report. Others contemplated are awaiting the approval of the Missouri Public Service Commission.

# *The American City Quiz*

### ANSWERS TO QUESTIONS ON PAGE 5

1. Dave Purdie, Builders-Providence, says to locate them so that they are always full of water. He says a master meter is too "dumb" to tell the difference between "fizz" and water. He also warns that one should be sure the water is free of foreign objects, since the meters cannot measure accurately old shoes, overalls, large fish. A venturi should be 10 diameters away from fittings; an orifice meter should be somewhat further; a propeller meter can be somewhat closer. They can be installed on an inclined plane, not near check valve.

2. Heavy concrete shields over the motors and other vital parts were effective during the recent war. Pumps with the motors submerged beneath the water surface, such as the Byron-Jackson submersible, offer great possibilities in that the motor is well protected naturally; and, since no building is required, the location of the station is effectively concealed.

3. The Drott Manufacturing Company, of Milwaukee, Wis., records 122 cities in 34 states and one territory plus two Canadian cities using the sanitary landfill and employing the Drott Bullclam equipment. Largest is Richmond, Va. (population 193,000). The smallest is Rockville, Md. (population 5,000). In addition there are many cities using draglines and tractors.

4. Most convincing is the evidence presented by the Drunkometer. It is used by 125 cities and 22 state law-enforcement agencies. It is accepted in 28 states as competent court evidence. Typical of its effectiveness is its record in Washtenaw County, Mich., where only 1 out of 84 accused of drunken driving were acquitted. Prior to its use, 38% were acquitted.

5. The tanks should be painted 1½ feet above and below the water line. The paint should be a two-coat application of a waterproof, chemical-resistant, plasticized, black coal-tar pitch enamel or a thixotropic coal tar coating. This protects against greases and oils. If the sewage contains packing-house or dairy wastes, a vinylite resin base probably should be substituted.

6. It is costing Cincinnati and Hamilton County $1,112,200 to survey 414 square miles. The work was originated under the late H. H. Kranz, City Engineer. It is being performed with the accuracy of standard transit work from the ground to 5-foot contours by the Aero Service Corporation, of Philadelphia, Pa.

7. Thomas Hay, Superintendent of Sewage Treatment at Racine, Wis., believes they should have these features: be presented on good paper with quality printing, using ample pictures and graphs; contain a description of the plant and its history; present operating procedures, unusual problems, maintenance practices; disclose cost data; present recommendations; be based on daily records.

8. Berkeley, Calif., finds that a fair day's work is 405 calls in hill sections, 480 in flat sections, 360 in business districts.

9. The industrial should not be less than one-third the residential rate, according to Charles Capen, Chief Engineer of the North Jersey District Water Supply Commission.

10. Joseph Dietrich, Superintendent of Parks and Trees at Greenwich, Conn., believes it can. He sprays trees 50 to 75 feet high with 5 to 8 pints of 12½% emulsifiable DDT using a Lawrence Mist Blower, and cut the incidence of the blight from 186 trees in 1946 to 51 in 1948.

***Send in your suggested questions with the answers on municipal topics for use in this feature. THE AMERICAN CITY will make a small payment for each question accepted.***

# How Prichard uses elevated storage

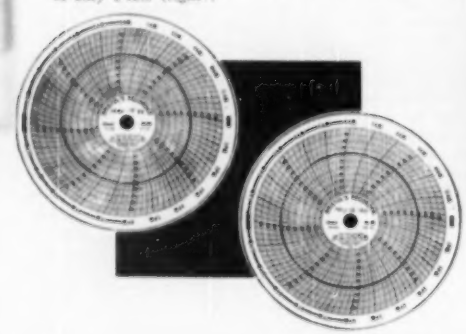
## to help meet peak demands on water distribution system

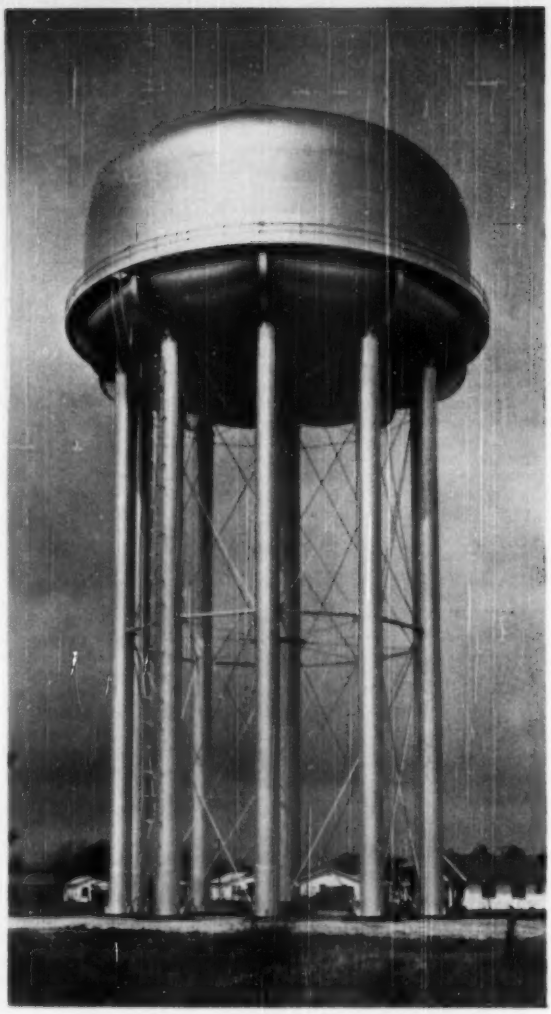
The maximum daily consumption of water in the city of Prichard, Alabama, is 3,700,000 gals. To help meet this peak demand, the city recently increased its total water storage capacity to 2,230,000 gals. by adding the 1,000,000-gal. Horton elevated tank shown at the right.

The reserve in this new tank flows into the system by the unfailing force of gravity during peak load periods. This means that the pumps can be operated at a relatively uniform rate—which results in maximum pumping efficiency. By helping supply the additional water needed during high consumption periods, the Horton tank also reduced the pressure variation in the mains from 10 lbs. per sq. in. to 4 lbs.

In addition to supplying water for peak loads, Horton elevated tanks provide reserves for fire protection which often reduce insurance rates. The radial-cone bottom design which is shown at the right is very popular for it provides large storage capacity without an excessive range in head. This design is built in standard capacities from 500,000 to 3,000,000 gallons. Write our nearest office for a bulletin which gives complete details.

*Below: Charts showing how 1,000,000-gal. Horton tank reduced pressure variation in the water mains at Prichard, Alabama, from 10 lbs. per sq. in. (left) to only 4 lbs. (right).*





*Above: 1,000,000-gal. Horton radial-cone bottom elevated water tank at Prichard, Alabama. It has a range in head of 35 ft. This tank—like all our municipal installations—was built in accordance with the American Water Works Association Specifications.*

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**Plants in BIRMINGHAM, CHICAGO, SALT LAKE CITY and GREENVILLE, PENNSYLVANIA**

# Water Supply and Treatment

## San Diego Builds New Filter Plant

**The new Alvarado filtration plant is well under construction to complete a very important link in San Diego's extensive system of water development and supply. This view of the plant, taken from the wash-water tank, shows a Lorain Moto-Crane with a 70-foot boom placing concrete in a portion of the structure.**

## Water Use in Multiple Dwellings

WATER use in multi-family apartment buildings averages approximately 60 gallons per person per day in those dwellings served by the Hackensack Water Company, Weehawken, N. J., according to a study by Edward Walasyk, Distribution Engineer. Mr. Walasyk gave these figures before the annual meeting of the American Water Works Association held recently in Philadelphia.

The average of all multiple dwellings served by the company is 700 cubic feet per apartment unit per month. A study of a 32-family apartment in Maywood, N. J., that showed a typical flow pattern per day, recorded a use of 690 cubic feet per day. It houses 64 adults and 24 children and recorded an actual water use of 59 gallons per person per day during the period studied. The Meter Master record showed that 8.3% of all the water registered during a 24-hour day was below 1½ gpm. It also showed that 30% of the time, the rate was below ½ gpm.

Figures from Omaha, Nebr., presented by John C. Detweiler, Manager of the Water Operations Department of the Metropolitan Water District, showed a use of 640 to 700 cubic feet per month per apartment in two 500-family public housing projects, and 424 cubic feet in a 400-family privately-owned apartment house, all metered. Apartments in the first two ranged from 3½ to 6½ rooms, and in the third, from 1 to 3 rooms. The size of the apartments, Mr. Detweiler stated, probably accounted for the difference in water use. He called particular attention to the similarity in water use between the apartment houses in Omaha and the apartment in Maywood as an illustration of similarity of water use in widely separated locations.

Data presented by Harry Shaw, Deputy Chief Engineer, Washington Suburban Sanitary District, showed 69 to 77 gallons per person per day in apartments as compared with 47½ gallons per person per day in separate dwellings.

### *How Much Reserve in Impounding Reservoirs?*

FOR a quick answer, the figure should be substantial—great enough to provide a safety factor against uncertainties in rainfall and water use. W. W. Brush, Editor of *Water Works Engineering*, New York City, speaking before the annual meeting of the American Water Works Association in Philadelphia recently, said that when the use of water exceeds stream flow and depletes reservoir capacity by 75%, the safety of the supply may be endangered.

New York City's water supply might have been at the breaking point several times during the past six years, had not the weatherman been on the side of the city, according to Edward J. Clark, Chief Engineer of the Department of Water Supply, Gas, and Electricity of New York City, who spoke at the same meeting. The combined yield of the Catskill and Croton watersheds, plus 75% of the combined storage used to maintain flow, produces a dependable supply of 888 mgd, or about 275 mgd under the average amount used from municipal sources in 1949. Since 1945 and until December 1949, New York City had consistently used more than the dependable yield of its system. Opportune rains tided the city over until 1949.

In the North Jersey area it had been necessary to curtail average usage during the first part of 1950 at 70% of the normal use, stated C. H. Capen, Chief Engineer, North Jersey District Water Supply Commission. As of June 6, however, reservoir level at Wanaque had exceeded expectations and restrictions have been removed with the warning note that all unnecessary uses should be eliminated. The district supply depends on surface run-off, is similar to New York City's system of reservoirs, and suffered from the same drouth conditions.

### *More Water Use per Capita*

WATER use is not necessarily proportioned to population. The industrial growth of our country has resulted in the increased use of water so that the demand frequently overbalances the population growth. This was one of the points made by S. T. Powell and H. E. Bacon, consulting chemical engineers, at the American Water Works Association annual meeting held recently in Philadelphia. For an example, they noted that the population of Texas has grown 287% since 1890, but in that same period, its water demand has grown 7,000%.

To avoid shortages, they recommended treatment and reuse of sewage, decentralization of industry, flood-control measures, and stricter groundwater laws.

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# RYERSON STEEL

# Street Cleaning and Refuse Disposal

## Dearborn Requires Grinders in Commercial Establishments

By FRANK B. SWAPKA
*Director of Public Works*
*Dearborn, Mich.*

DEARBORN, Mich., has moved nearer to an avowed goal of replacing garbage trucks with individual food-waste disposal units in all residences.

Under an ordinance enacted by the City Council last May, all new commercial food-handling establishments are required to install garbage grinders before occupancy.

The new law applies to all multiple dwellings of more than four families, as well as all restaurants, groceries, and other establishments handling perishable foods. Existing buildings in those categories are given one year in which to install grinders.

The subject of garbage grinders in all Dearborn homes has been considered for several years. Measures have been before the City Council periodically since 1948, when Michael J. Boyle, Superintendent of Building and Safety, stated, "We believe that garbage grinders are the only sanitary method of disposing of garbage."

Studies made by our department show that the city-wide use of grinders would mean a saving of about $190,000 annually to the city by the elimination of collection services. The city sewage system would very easily be able to absorb the additional ground-waste matter.

Many builders erecting homes in Dearborn are voluntarily installing the grinders as standard equipment along with other household necessities.

*The City of Dearborn Ordains:*

Section 1. That Article 2 of Ordinance No. 131 commonly known as the Plumbing Code of the City of Dearborn be and is hereby amended by adding thereto a new section to be numbered Section 210-a which shall read as follows:

Section 210-a. All new buildings except one-, two-, and four-family residences, and all buildings remodeled or altered which are designed, equipped, and used for storing or sheltering food or food stuffs for human consumption, including fruits, vegetables, and meats which are to be sold either at retail at stores, clubs, hotels, restaurants, schools, or other food establishments or at wholesale, or which are prepared at food manufacturing or processing plants, including slaughter houses, whether such places of business are licensed under the provisions of any Dearborn city or ordinance, or not, and all buildings where foods for human consumption are prepared, sold, handled, stored, or served in any manner whatsoever shall be equipped with an appropriate type of garbage grinder, properly connected to the kitchen sink or sewer drain, which grinder and connections shall be of sufficient size to grind all garbage and food-processing wastes produced in such building, and shall be suitably located so as to discharge such ground material by flushing it with water through the drain pipes into the sewer.

Existing multiple dwellings over four-family residences, restaurants, hotels, public markets, and all food handling establishments, shall comply with the above requirements within one year after the effective date of this Ordinance.

## Forty-Eight Inches of Snow Per Year

**Ely, Minn., sets itself to the task of clearing windrowed snow from streets.**

EACH winter we can expect an average of 48 inches of snow. This snow will have to be plowed from all our streets, and alleys, and sidewalks, and as rapidly as possible after each storm. In addition, we must completely remove the snow from about 1½ miles of downtown streets. Immediately after each storm, or during the storm if it is heavy, motor graders and Street Department trucks equipped with plows are used to do the plowing on the streets. The sidewalks are plowed with a Minneapolis-Moline rubber-tired tractor equipped with a one-way blade. Unless the snow is very heavy, everything is opened up within a few hours after the snow has stopped falling.

For complete snow removal, the snow is windrowed into the center of the curbing and then is loaded into the same trucks previously used for plowing. After the sidewalks are plowed, the blade is removed and in a few minutes the snow bucket is attached to the Lull front-end loader that is mounted on the Minneapolis-Moline tractor. We are able to move from 120 to 140 four-yard loads during an eight-hour day with this equipment. The number of trucks used will depend on the haul to the snow dump.

The tractor is also equipped with a power street-sweeper, a crane hook, and a gravel bucket. The snow blade is also used for light bulldozing. With the quickly interchangeable attachments, the tractor is a useful piece of year-round equipment.

Many small communities do not own enough specialized equipment to perform all required tasks. We have found that a rubber-tired tractor can be used with a variety of attachments, and now we wonder how we were ever able to get along without it in the past.

W. M. SOMERO, *City Engineer*
*Ely, Minn.*

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# Street Construction & Maintenance

## New York City Experiments With Rubberized Streets

FIVE test stretches of rubber-asphalt streets are being installed in New York City to test its use under heavy traffic conditions.

In cooperation with the Firestone Tire and Rubber Company, Akron, Ohio, the Natural Rubber Bureau, Washington, D. C., and the Goodyear Tire and Rubber Company, Akron, the Borough of Manhattan paved a section of the West Side Highway, near 12th Street, with an asphalt-natural rubber powder mix. This is one of the city's busiest roads. It is estimated that some 60,000 cars per day roll over the new pavement section.

### Officials Present

On hand to assist with the laying were top officials from the office of the Borough President of Manhattan. These included Charles Hand, Commissioner of Borough Works; Anthony Donargo, Chief Engineer; Harry Levy, Principal Assistant Engineer; and Warren W. Dyckman, Engineer in Charge of Maintenance.

The type of natural rubber used in this project is the same as that used in a road outside of Rotterdam, Holland. New York City engineers were anxious to use this particular rubber because the Rotterdam road has been in operation for over 12 years with no repair.

This is particularly noteworthy because during that time, Nazi military traffic used the road to invade Holland and the Allies used it to drive the Nazis out. It goes without saying that military traffic is about the heaviest to which a road or highway can be subjected.

Workmen rake into place New York City's first rubber-asphalt street surfacing.

In order to observe the reactions of all types of rubber-asphalt combinations, New York City is laying five stretches of highway over an area of 1,500 square yards. The longest strip used natural rubber. Three pieces used varying types of synthetic and processed rubber, and one was laid as a control, using regular asphalt. At a later date another 2,000 square yards will be added.

All of the mixes were put down over the cobblestones with which the West Side Highway is paved at the point where the rubber road was laid.

## At the ARBA Meeting

**Three city officials from scattered parts of the nation were talking shop when the cameraman caught them at the 47th annual meeting of the American Road Builders Association, held recently at the Netherland Plaza Hotel in Cincinnati, Ohio. Left to right are Warren A. Coolidge, Nashville, Tenn., Director of Public Works; the late H. H. Kranz, Cincinnati City Engineer, former president for the ARBA Municipal Division; and George Shepard, veteran St. Paul, Minn., City Engineer.**

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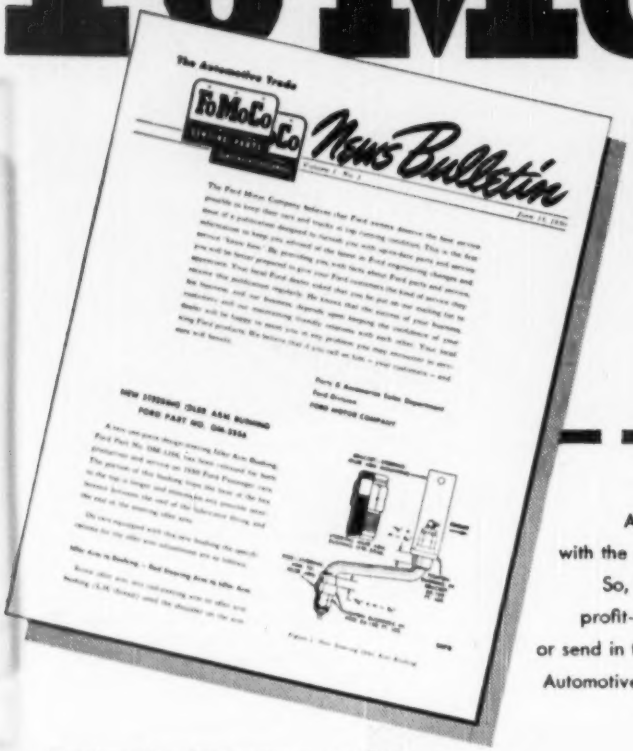


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# Airports and Aviation

## New Radar Units for 28 Airports

CONTRACTS for almost $2,500,000, covering the manufacture of radar units and their installation in 28 control towers at civil airports in the United States and Alaska, have been awarded by the Civil Aeronautics Administration to the Bendix Radio Division, Bendix Aviation Corporation, reports D. W. Rentzel, Administrator of Civil Aeronautics.

Equipment to be installed in the 28 airports includes an equal number (14 each) of airport-surveillance radar (ASR), and precision-approach radar (PAR) units.

The ASR units have an effective range of about 30 miles, although large aircraft can be seen at greater distances. ASR radar is used for the surveillance of air traffic in the terminal area by the control tower, and for guiding aircraft to the proper position for final approach.

PAR units, which are installed at some airports having ASR units, are used as a final approach and landing aid to "talk" aircraft down to a landing, or to monitor final approaches made by means of other aids, such as the instrument-landing system.

Procurement of the 14 PAR units announced today will increase to 22 the total number of PAR installations thus far contracted for CAA, and the 14 additional ASR units will bring the number of these units under CAA contract to 49. Delivery and installation of the 28 new units will begin in the summer of 1951.

Previous contracts were awarded in 1948 (8 PAR and 8 ASR units), and in 1949 (27 ASR units). No PAR units were procured under last year's program because of the greater need for ASR units at that time.

The contract for the 14 ASR units totals $1,408,844, and the other contract comes to $1,070,708 for the same number of PAR units. Both figures include installation at the specified airports, the Administrator said.

Airports which will receive the new ASR radar units, under current plans, include:

San Antonio Municipal; Berry Field, Nashville, Tenn.; Cliff Maus Field, Corpus Christi, Texas; Standiford Field, Louisville, Ky; Buffalo (N. Y.) Municipal; Will Rogers Airport, Oklahoma City, Okla.; Friendship Airport, Baltimore; McGhee-Tyson Airport, Knoxville, Tenn.; Dayton (Ohio) Municipal; Long Beach (Calif.) Municipal; Meacham Field, Ft. Worth; State Airport, Harrisburg, Pa.; Lockheed Air Terminal, Burbank, Calif.; and T. F. Greene Airport, Providence, R. I.

Airports tentatively scheduled for PAR installations under the present program include:

Greater Pittsburgh Airport (Pa.); Philadelphia International; Willow Run, Detroit, Mich.; Kansas City Municipal; Weir Cook Field, Indianapolis, Ind.; Seattle-Tacoma (Wash.) Airport; Portland (Ore.) Municipal; Houston (Tex.) Municipal; Love Field, Dallas, Tex.; San Francisco Municipal; Metropolitan Airport, Newark, N. J.; Oakland (Calif.) Municipal; Lambert Airport, St. Louis, Mo.; and Anchorage (Alaska) International.

Airports which are expected to get ASR units under the 1949 procurement program, delivery and installation of which will begin this summer, include:

Newark, Pittsburgh, Seattle-Tacoma, San Francisco, Oakland, Portland, Ore., Philadelphia, Houston, Birmingham, Dallas, St. Louis, Kansas City, Denver, Salt Lake, Minneapolis, New Orleans, Memphis, Detroit, Greater Cincinnati (located in Covington, Ky.), Columbus, Indianapolis, Jacksonville; Anchorage, Annette Island, and Fairbanks, Alaska; Honolulu and Norfolk.

Installations of the eight units of each type procured in 1948 are being completed in all of the airports where these dual installations were allocated, although only one of the installations has been officially commissioned — at La Guardia Airport. Commissioning of others is imminent, and it is expected that by early fall all eight will be in operation. In addition to La Guardia, these installations are at Washington National Airport; Logan Airport, Boston; New York International Airport; Municipal Airports at Cleveland and Atlanta; Chicago Midway Airport, and Los Angeles International Airport.

## Municipally Owned Airplanes

IT'S only a question of time until major cities everywhere will be using planes of their own. This is the view of Arnold V. Finch, Toledo, Ohio, City Manager, who, this month, in company with Edward De Angelo, Toledo's Director of Public Safety, is completing an air tour of the United States in the Ryan Navion executive plane.

The potential use of a plane like the Navion in city business is great, Mr. Finch believes. "In our own case at Toledo, we figure that what is frequently a full week's traveling on the road can be reduced to a two-day round trip by Navion. A trip to Columbus, where the State Supreme Court convenes, usually means staying there overnight if we use the train. With a Navion we get there in 40 minutes, handle business the same day and return to Toledo that evening."

**Arnold V. Finch (left), Toledo, Ohio, City Manager, and Edward De Angelo, Toledo's Director of Public Safety, stand alongside the Ryan Navion they have used for an air tour of the U. S.**

Mr. Finch and Mr. De Angelo have been inspecting municipal projects during their trip as part of a survey of operations of other cities. Airports have received special attention. So have highways and swimming pools.

It was in connection with roads that they came upon another interesting use for air travel. While flying over Tucson, Ariz., Mr. Finch spotted a "T" intersection. He was immediately anxious to study its features. So while Mr. De Angelo circled the Navion at low altitude, Mr. Finch sketched the arrangement.

"The many special trips which municipal officers have to take are tailor-made for the fast business plane," he adds. "For example, there's the trip several of our men had to make recently to Milwaukee to inspect that city's municipal garage operation. Then there are gatherings like the International Conference of City Managers held annually. Every year important meetings of this nature for city executives, engineers and others on the professional staff are held in Detroit, New Orleans, Los Angeles and elsewhere. On such trips alone, a plane could soon save enough money over slower, more costly travel methods, to go a long way toward paying for itself."

# *Delayed Alarms Cost Lives in* RESIDENTIAL DISTRICTS

***According to the Fire Record***

- 367,000 fires annually occur in dwellings (a recent 5 year average).
- $\frac{2}{3}$ of the *Life Loss* by fires occurs in dwellings.

***Public Fire Alarm Boxes Essential***

The absence of quickly accessible and public means for calling the fire department contributes to delay and unnecessary fire waste. According to the Standards recommended by the National Fire Protection Association, it should not be necessary, in residential districts, to traverse more than one block or 500 feet in order to reach a public fire alarm box.

A "BOX A BLOCK"
IS ESSENTIAL PROTECTION

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# Public Safety

## Richmond, Calif., Lauds Selective Radio

TWO RADIO innovations extending from our City Pound to the Police Department may interest quite a number of municipalities. We have equipped the two Pound vehicles with three-way radio to keep them out on the job without having to return for orders.

The Pound telephone is routed through the City Hall switchboard so that calls may be taken by the Health Department clerks when the Pound personnel is out on the job. Information is then relayed to the truck which is nearest to the source of the call, by the police radio. A corollary benefit of this is that Pound men may report suspicious circumstances or dangerous conditions to the Police Department for action by their own personnel.

The other innovation is the institution of a remote-calling device on our accident-investigation cars, which we intend to extend to all emergency vehicles. When a police officer has left his car and the radio dispatcher is unable to obtain a response, he can, by dialing the code number of the car, actuate the horn of the police car, which will continue blowing until the officer returns and reports in to the dispatcher. In this way the men may be withdrawn from a lesser investigation or minor accident to be detailed to one of major importance. It even provides an on-call service for men who may leave the car.

The "selective calling" equipment is manufactured by the Link Radio Corporation of New York, N. Y. It is inexpensive and can be added to any vehicle carrying a police or fire radio receiving set. The "selective calling" feature is a modification of the telephone dial system. The first step is the installation of a calling device on the radio transmitter. This device consists of a tone oscillator and a telephone dial. To operate the unit, tone is applied to the transmitter by the tone oscillator and broken into parts, or "peeps," by the dial control. These tone characters are received through mobile units installed in each vehicle. With it, as many as 80 cars may be selected from the transmitter.

Cars are given dial numbers. Then, when the radio dispatcher wishes to contact a specific car, he dials the number assigned to it. Other cars similarly equipped (but with different numbers) will not receive the signal. In the operation, either the horn of the car is honked or a red light in the car, or on top of the car, is caused to blink. The dispatcher has complete control over the length of time a car is signalled by horn or by the light.

The results have been extremely satisfactory. So much so, in fact, that plans are now being made to install the units in fire cars. With this feature on fire trucks, the entire company can be used for inspection. In the event they are needed, they can be summoned by the horn or siren.

### Red Light at Night

The remote control of the horn is used mostly during the daytime. At night, the red light is used so that sleeping persons will not be subjected to the annoyance of the horn. Officers making routine checks in residential or business areas can readily see the red light. Once the light comes on, it continues burning until the officer responds on his radio.

This new aid to our Police and Fire Departments gives us assurance of contact with officers and firemen when they might otherwise be out of service. The system has been in operation in the Police Department for over a year. During that time, no technical troubles have developed. The unit always responds and can be depended on at all times.

One outstanding example will illustrate the benefit derived from selective calling. An accident-investigation car was stationed at an accident scene at a time when a serious crime was committed in another section of the city. The traffic officer was alerted by the horn. He succeeding in apprehending the two persons responsible for the crime. Had he not known of the emergency, he would have assisted the violators through the congested traffic at the accident scene.

WAYNE E. THOMPSON
*City Manager, Richmond, Calif.*

## *Organized Fire Protection in Rockford, Ill.*

ABOUT a year ago, the Rockford Fire Department really went into high gear with inspection by all fire stations. A general order required that there must be one man from each station inspecting in his territory at least six hours a day. The only excuses for any fire captain's not having a man out inspecting was bad weather, house drilling, or special events. This meant that 12 men were inspecting each day in our city.

Serious violations are reported to headquarters, where we have two fire inspectors, one a photographer. When a complaint is received at headquarters, the two special fire inspectors drive to the scene of the violation and photograph the reported hazard.

Within an hour of developing the picture, the two men locate the owner or occupant, and arrange for a correction of the violation. Arrests have been few. Most of the violators are startled by the picture, and usually go farther than the law requires in making the correction.

WAYNE E. SWANSON, *Chief*
*Rockford (Ill.) Fire Department*

## *Police Courtesy versus Laxity*

MANY visitors receive a lasting impression of the town by the appearance and manner of the police. A ticket for a traffic violation, particularly if not quite justified, can make that town mean trouble in the memory of the motorist receiving the ticket.

Municipal officials know this, and many are calling their policemen "salesmen of the town." Several cities have tried courtesy notes instead of tickets for overstaying parking-meter time. The note says that the police department has deposited the overtime nickel which the motorist may refund if he desires to do so.

At first there is great appreciation and acclaim; carelessness and callousness come later. For instance, in Hoquiam, Wash., there were 256 tickets issued during the month before the courtesy plan was tried. Thereafter, violations ran 400 to 500 per month, with the latter figure in the last two months of the plan. The trend was toward general disregard of the parking meters.

Leniency is good in particular instances where it fits. As a general policy it is demoralizing. Police courtesy is universally appreciated. It had better be confined to answering questions and giving directions than include indulgence for misdemeanors.

**NEW!**

—just off of the press—a bulletin on Layne Short Coupled Service Pumps, showing many diagrams of application for circulating and process pumping, lake and river intakes, drainage, line boosters and de-watering uses. Write for your copy today.

# LAYNE OFFERS ALL OF THIS-

• Layne—and Layne alone is in a position to offer nearly three quarters of a century of world-wide experience in the designing and building of municipal, industrial and irrigation Well Water Systems.

• Layne—and Layne alone can offer all services from the original exploration to the designing of the systems, drilling the wells, building and installing the pumps,—and final delivery with a dependable guarantee of performance.

• And again it is Layne and Layne alone who can offer the services of eleven strategically located Associated Companies, each of which is widely experienced and fully capable of,—and has made installations of all sizes.

• It is Layne—and Layne alone who can offer evidence of their skill and success by pointing to thousands of installations made throughout the United States, Canada, Mexico and Latin America, Europe, Africa and Asia.

• Such experience and skill adds up to a splendid recommendation for all who are contemplating the installation of a Well Water System. For catalogs, bulletins, etc., address

**LAYNE & BOWLER, INC.**
**GENERAL OFFICES, MEMPHIS 8, TENN.**

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**ASSOCIATED COMPANIES**—Layne-Arkansas Co., Stuttgart, Ark. ★ Layne-Atlantic Co., Norfolk, Va. ★ Layne-Central Co., Memphis, Tenn. ★ Layne-Northern Co., Mishawaka, Ind. ★ Layne-Louisiana Co., Lake Charles, La. ★ Louisiana Well Co., Monroe, La. ★ Layne-New York Co., New York City. ★ Layne-Northwest Co., Milwaukee, Wis. ★ Layne-Ohio Co., Columbus, Ohio ★ Layne-Pacific, Inc., Seattle, Wash. ★ The Layne-Texas Co., Ltd., Houston, Tex. ★ Layne-Western Co., Kansas City, Mo. ★ Layne-Minnesota Co., Minneapolis, Minn. ★ International Water Corp., Pittsburgh, Pa. ★ International Water Supply, Ltd., London, Ont. ★ Layne-Hispano Americana, S.A., Mexico, D. F. ★ General Filter Company, Ames, Iowa.

**LAYNE**
**WELL WATER SYSTEMS**
VERTICAL *Turbine* PUMPS

# Sewerage and Sewage Treatment

## New York to Complete Jamaica Bay Program

NEW YORK CITY'S harbor-pollution abatement is taking a 15-mgd step closer to completion through an award by the Department of Public Works for the construction of the Rockaway Sewage Treatment Plant.

This plant will include a pump and power house, a grit-removal building, four covered digester tanks 50 feet each in diameter, four open aeration and four closed sedimentation tanks, and a chlorine and sludge-storage building. The digested sludge will be taken to sea by tankers for disposal. The design was prepared by Metcalf and Eddy, Boston consulting engineers.

The Rockaway plant will serve the entire Rockaway peninsula area of 4,736 acres with a population of 90,000. It is designed for ultimate expansion to handle 30 mgd if needed. Completion is scheduled for late 1951 or early 1952. When it is completed, all sewage entering Jamaica Bay will have been treated. Three other plants already are in operation, handling sewage entering the Bay. These are Coney Island, 26th Ward, and Jamaica.

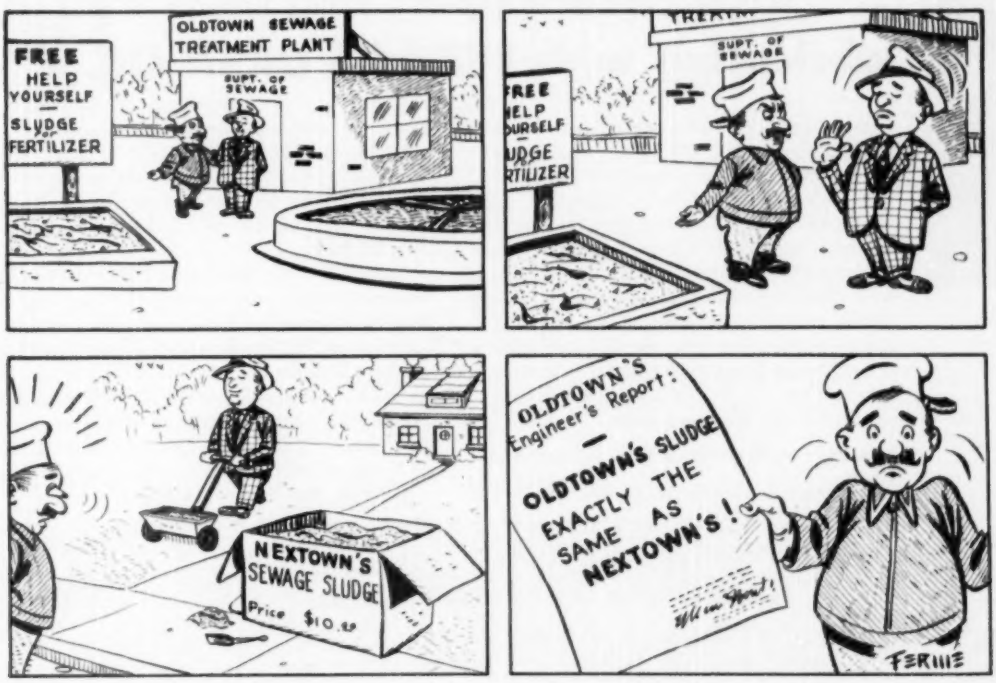
The planning and construction of the Rockaway plant are under the jurisdiction of Frederick H. Zurmuhlen, Commissioner of the Department of Public Works. Plans were drawn by the Boston firm of Metcalf and Eddy, under the direction of the Public Works staff, headed by Richard H. Gould, Director; Wellington Donaldson, Assistant Director, and William O'Leary, Chief of the Bureau of Sewage Disposal Design. Construction will be under the direction of Alfred R. Glock, Chief of the Bureau of Sewage Disposal Construction, and Charles Cousens, Resident Engineer. Merritt-Chapman and Scott Corporation of New York hold the general contract.

## 273 Cities Charge Sewer Rentals

AT LEAST 273 cities of more than 10,000 population have now dropped expenditures for sewage disposal from their general tax budgets by the use of sewer-service charges, according to the International City Managers' Association. Collections from sewer rentals totaled more than $25,000,000 in 1948—the last year all cities reported total collections.

Camden, N. J., was the largest city to set up sewer-service charges last year. In effect less than a year, the rental charge brought in revenue of more than $227,000. Other cities adopting the charge during the year were Lansing, Mich., Portsmouth, Va., Joliet, Ill., Mason City, Iowa, Norristown, Pa., and Wichita Falls, Texas. Four cities of more than half a million population —Buffalo, Cleveland, Detroit, and Philadelphia—use the charge to finance their disposal operations.

Methods of computing sewer charges differ widely. The more popular, as revealed by the Association, are: on metered water consumption; on a fixed per cent of the water bill; by fixed uniform rates; on the number of plumbing fixtures; and on the number of sewer connections. Most cities that have adopted sewer rentals assess charges against residential as well as commercial sewer users.



# Give your engines more "PUSH"

## AND reduce operating costs by lubricating with TEXACO URSA OIL X★★

Keep your tractor and truck engines *clean* and you'll have full power when you need it . . . maintenance costs and fuel consumption will both be lower. For heavy-duty gasoline and Diesel engines, the lubricant to use is *Texaco Ursa Oil X★★*. It's detergent, dispersive, dependable in even the severest service.

*Texaco Ursa Oil X★★* has oxidation resistance to spare. Thus, engines don't get "lacquered up," rings stay free and valves act the way they're supposed to. You get all the power your engines are designed to deliver. *Texaco Ursa Oil X★★* stands up under heat and pressures . . . protects parts against wear . . . protects bearings against corrosion.

### 3 Other Maintenance Cost Reductions

Chassis bearings will get extra hundreds of miles of protection, chassis parts will last far longer, when you lubricate with *Texaco Marfak*.

Wheel bearing replacements will be far fewer when you lubricate with *Texaco Marfak Heavy Duty*. It seals out dirt and moisture, requires no seasonal change.

Crawler track mechanisms run better, last longer, protected with *Texaco Track Roll Lubricant*. It gives long-lasting protection against water, dirt and wear.

Follow the Texaco Simplified Lubrication Plan and save maintenance costs all along the line. A Texaco Lubrication Engineer will gladly give you full details. Just call the nearest of the more than 2,000 Texaco Wholesale Distributing Plants in the 48 States, or write The Texas Company, 135 East 42nd Street, New York 17, N. Y.

TEXACO

## TEXACO Lubricants and Fuels

FOR ALL CONTRACTORS' EQUIPMENT

# Ask For What You Want—No Charge!

**Please check over the list of interesting free catalogs on this and following pages. To obtain the literature you want, write directly to the manufacturers, or circle the identifying numbers on this coupon and mail to THE AMERICAN CITY MAGAZINE, 470 Fourth Ave., New York 16, N. Y. We will see that catalogs are sent to you without expense or obligation.**

8/50

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| 380 | 381 | 382 | 383 | 384 | 385 | 386 | 387 | 388 | | | | | |

**Name** ..... **Position** .....

**Address** .....

### Make Your Town A Recreation Community

**294** Literature on a packaged program to promote better recreation—not only for the youngsters, but for the adult age group—is offered by the General Electric Co., Apparatus Dept. Section GED-1283, 1 River Rd., Schenectady, N. Y.

### Make a Sweeper Of Any Motor Truck

**295** The Frink Roto-Broom attaches to the front end of any motor truck and may be used to sweep away dust, dirt, sand, gravel, cinders, leaves, and snow. A water spray attachment is available as optional extra equipment. Write to Frink Sno-Plows, Inc., Clayton, 1000 Islands, New York.

### New Weatherproof Adjustable Traffic Signals

**296** The new line of Killark all-purpose traffic signals features one-piece, non-corrosible Alumalloy construction. Fixed type is 4-way one-piece unit; adjustable type is made up of single, self-contained signal sections. Write for details to Killark Electric Mfg. Co. Vandeventer and Easton Aves., St. Louis 13, Mo.

### Easily Visible Street Signs

**297** Ferro street signs are of embossed porcelain enamel, designed to give the street name as well as the block indication. Write for literature to the Ferro Enameling Co., 1100 57th Ave., Oakland 3, Calif.

### No Water-Pipe Scale

**298** Prevention of scale deposition by threshold treatment of water with Calgon, a vitreous sodium phosphate, is described in a new folder offered by Calgon, Inc., Hagan Bldg., Pittsburgh 30, Pa. The chemical has been used in preventing scale deposits in boiler feed water lines, recirculation cooling systems, and after-precipitation following lime-soda softening.

### Steel Folding Chairs Can Be Comfortable

**299** The Clarin Mfg. Co., 4649 W. Harrison St., Dept. Y-7, Chicago 44, Ill., will send you a folder illustrating its line of steel folding chairs. Folding down to 2 inches in width, the chairs are sturdy and comfortable.

### A Magnetic Sweeper

**300** The Cesco magnetic sweeper picks up nails and other ferrous materials from streets, roads, airports, and yards. No more punctured tires. There is no danger of shock to employees in damp or wet places, because the mechanism is non-electric. Write the Columbia Engineering Service Co., 593 Market St., San Francisco 5, Calif.

### Highway Sprayer with Removable Gun

**301** The Kromer Deluxe Highway Sprayer for applying brush killer chemicals is equipped with 200-gallon tank, lightweight handboom, 2 hose reels, two 50-foot lengths of heavy-duty hose. Spring mounted tank frame. Extra 50-foot hose optional. For catalog of this and other Kromer sprayers, write O. W. Kromer Co., Minneapolis 11, Minn.

### New Batching Bin Speeds Operation

**302** The light weight steel Carrollton Batching Bin charges a mixer as fast as a two- or three-bag mixer can pour at reasonable mixing time of 1 minute to 1½ minutes. Two-man operation eliminates wheelbarrows, scales or expensive batching plant. Write for details, prices and job experience rating to Carrollton Mfg. Co., 5350 Montrose Drive, Dallas, Tex.

### Your Water Problem

**303** Industrial water engineering services offered by Hall Laboratories, Inc., Pittsburgh, Pa., are described in its new booklet, *Let's Consider Your Whole Water Problem.* Hall technical staff organization is described and diagrammed; typical service problems discussed, and flow sheets illustrated. Write for booklet to above address.

### Preparing Black Top Road For Oiling

**304** In one day, one man with a motor grader and Grid roller can salvage and prepare one mile of black top road for oiling. This machine scarifies the black top, pulverizes the top to fines, windrows the pulverized matter, then spreads the windrow and applies the oil before mixing, relaying, and compacting in preparation for the seal coat. Write the Hyster Co., 2902-61 N. E. Clackamas, Portland 8, Ore.

### Cut Catch-Basin Cleaning Costs

**305** The Hydrocrane, made by the Bucyrus-Erie Hydrocrane Div., South Milwaukee, Wis., has enabled the Milwaukee sewer department to reduce catch basin cleaning costs by 60%. Equipped with an orange-peel type hydraulic catch basin cleaner, the Hydrocrane averages 30 catch basins a day.

### Protect Your Truck Against Icy Roads

**306** The best brakes, tires, equipment, and drivers fail without traction. Elston electric road sanders give positive skid control, reduce personal and property damage. Underwriters Lab report furnished on request. Write for descriptive literature to Highway Safety Appliances, Inc., 1361 Marshall Ave., St. Paul 4, Minn.

### Kill Pests with Mist Sprayers

**307** The Farquhar Iron Age mist sprayers can reach the tops of 90-foot trees and are used by municipalities to kill harmful insect pests in parks, playgrounds, swimming pools, and picnic grounds. Revolving turrets swivel 360° for complete coverage. Write the A. B. Farquhar Co., 3536-U Duke St., York, Pa.

### Surveys for Property Assessments

**308** The J. M. Cleminshaw Co., Union Commerce Bldg., Cleveland, Ohio, specializes in the revaluation of real estate, personal property, and public utilities for local tax equalization purposes. Write for an illustrated brochure.

### Automatic Valves

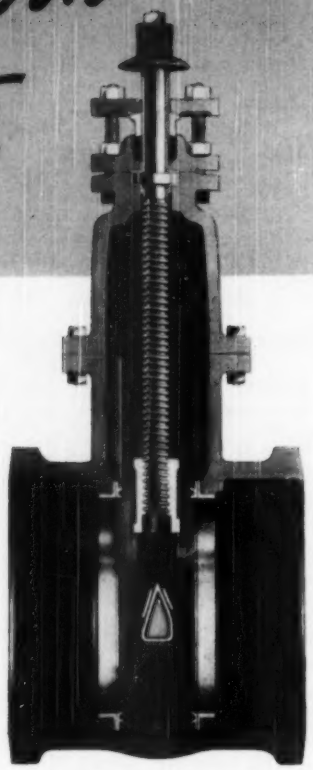
**309** The Ross Valve Mfg. Co., Inc., P. O. Box 596, Troy, N. Y., will send you information on its line of altitude, combination, remote control, pressure-reducing, relief and surge, and back-pressure valves. The combination valve acts as a pressure reducing and relief valve, as a pressure reducing and altitude valve, and as a relief and altitude valve.

### Hydrants and Valves

**310** Catalog No. 34 from the M & H Valve and Fittings Co., Anniston, Ala., describes the company's line of hydrants and valves. Included in the booklet are detailed specifications of hub end, mechanical joint, and flanged or screwed models.

***(Please Turn to Page 25 for More Literature***

# The very first turn OF THE VALVE STEM unlocks the gate



*Yes—the FIRST turning movement of the valve stem unlocks the VALVE WEDGING mechanism, and relieves the wedge pressure from both gates of*

## RENSSELAER
## *Double-Disc*
## GATE VALVES

THESE are the famous valves in which the gates are WEDGED closed, squarely and firmly, AFTER they reach the closing point opposite their seats. In opening, the wedging mechanism is positively and mechanically released, loosening BOTH gates. The additional turn of the valve stem simply lifts the LOOSENED gates into full open position.

This simple Rensselaer principle of "wedging" not only makes for ease of opening and closing but also minimizes sliding frictional wear on gate and seat rings.

Experienced Field Representatives are at your call to bring you the benefit of Rensselaer experience in Vaves AND Hydrants. Their service puts you under no obligation. Call our nearest office.

### TEN POINTS OF SUPERIORITY

1. Easy to Operate -- No binding of Stem; Wedges independent of Stem and Stem Nut can't bind.
2. Stems and Stem Nuts both SOLID BRONZE.
3. Wedges, SOLID BRONZE in sizes 10" and larger. Wedges in these sizes have Long and Short Wedging Surfaces. Long side insures greater power in Closing. Short side, maximum ease in Opening.
4. High Tensile Strength, Corrosion Resistant Iron.
5. Stuffing Box Bolts rust-proofed. Nuts BRONZE.
6. Easy to Repack — ample stuffing box depth and diameter.
7. Minimum wear on Rings — Gates Seat, Unseat, in "Fully closed" position.
8. Parallel, collapsible Discs — no sticking in closed position or binding of Stem due to tipping.
9. Interchangeable parts — due to precision Casting and Machining.
10. Long Life — Thousands still operating perfectly, some after 50 years.

LEADERSHIP FOR OVER 65 YEARS

**RENSSELAER**
**VALVE COMPANY**

*Hydrants • Gate Valves • Square Bottom Valves*
*Check Valves • Tapping Sleeves and Valves • Air Release Valves*

**TROY, NEW YORK**

*Division of Neptune Meter Company*

Atlanta, Bala-Cynwyd, Pa., Chicago, Dallas, Denver, Haverhill, Mass., Hornell, N. Y. Kansas City, Los Angeles, Memphis, Oklahoma City, Pittsburgh, San Francisco, Seattle

# Which Catalogs Interest You?

*Use the Coupon on Page 23*

### For Fire Fighting And Industrial Emergencies

**311** The M-S-A Demand Mask gives dependable 30-minute respiratory protection in gases, smoke and fumes. Approved by U. S. Bureau of Mines, the mask supplies oxygen, or air, to the wearer in exact accordance with his breathing needs. Weighs 32 lbs., complete with oxygen or air cylinder. Write for M-S-A Demand Mask Bulletin No. B-20, Mine Safety Appliances Co., Braddock, Thomas & Meade Streets, Pittsburgh 8, Pa.

### Need Diesel Power?

**312** If you do, you certainly would like to know how the engines work from the standpoint of the operators who are responsible for them. You can get just this type of information from the Lima-Hamilton Corp., Hamilton, Ohio, manufacturers of the Hamilton diesel engine. One operator of a big power plant says that they are about as perfect a machine as he can get.

### Improved Soap Dispensr

**313** Turco Products, Inc., has a new soap dispenser that prevents the wasteful use of soap through the use of a specially placed baffle plate at the top. For full information, write to Turco Products, Inc., 6135 South Central Ave., Los Angeles 1, Calif.

### Control Traffic with Signs

**314** The Eastern Metal Products Co., Elmira Heights, N. Y., makes a complete line of highway signs, posts, and traffic devices that are essential for the safety of both pedestrians and motorists. For literature write Dept. 6.

### Chlorination To Suit Your Needs

**315** Builders Chlorinizers are available in two volumetric models: the CVS comes in a capacity of 2,000 pounds per 24 hours and the Model DVS with a capacity of 400 pounds per 24 hours, both available with meters from 4 pounds per 24 hours. Write for bulletins to Builders-Providence, Inc., 358 Harris Ave., Providence 1, R. I.

### Volute Design Pumps

**316** The BJ double volute design on pumps provides protection against unbalanced radial forces which cause eccentric wear or fatigue stresses on the shaft. This design causes the flow to be divided and pressure conditions in one volute are always balanced by equal, diametrically opposite forces. Write the Byron Jackson Co., P. O. Box 2017 Terminal Annex, Los Angeles 54, Calif.

### Make Asbestos-Cement Pipe Laying Easy

**317** Here's the equipment you need when you lay asbestos-cement pipe. For those short lengths newcessary to fit special connections, you can use an H. D. Fowler spring-loaded asbestos-cement pipe cutter that will reduce cutting time by 50%. To prepare the cut pipe ends for couplings, use an A-C Tenon tool that will machine the pipe end to a factory finish. You can get bulletins on both of these by writing H. D. Fowler Co., Inc., P. O. Box 3084, Seattle, Wash.

### Do You Need Pipe?

**318** The U. S. Pipe and Foundry Co., Burlington, N. J., will send you information on its line of cast-iron pipe for water, gas, and sewerage service.

### Better Liquid Level Control For Water Works

**319** Autocon Twin Bellows' design provides pinpoint accuracy for separate and independent settings in Autocon Mototrols. Installed at the pump site, the Mototrols automatically operate pumps by means of pressure changes at pre-determined high or low tank levels. Automatic pre-lubrication of water-lubricated bearings is optional. Write the Automatic Control Co., St. Paul 4, Minn.

### Grind Brush to Chips

**320** The Asplundh brush chipper grinds brush and small twigs and limbs into chips, not only eliminating the problem of disposal but providing a good fertilizing agent. Write for details to the Asplundh Chipper Co., 501 York Rd., Jenkintown, Pa.

### No Blind Spots on This Sweeper

**321** The model 40 street sweeper is designed so that the operator has an unobstructed view of everything around him, including a full view of the gutter brooms—important from both a safety angle and the point of view of efficiency. The machine may be obtained with right- or left-hand gutter brooms or both. Write the Austin Western Co., Aurora, Ill.

### Voting— Can Be Quick and Inexpensive

**322** With the automatic voting machine voting is fast, there are no spoiled ballots, absolute secrecy is maintained, a mechanically accurate count is assured, a permanent record is obtained, the results are known as soon as the polls close—and the election costs are reduced. Write the Automatic Voting Machine Corp., Jamestown, N. Y.

### Why Accurate Meters?

**323** If your meters are absolutely accurate, revenues go up and losses go down. The visible rate-of-flow indicators on the Badger meter testers indicate rates of flow from 1/16 gallon to 160 gallons per minute. Write the Badger Meter Mfg. Co., Milwaukee 1, Wis.

### Self-Closing Waste Receptacles

**324** When trash goes into a waste receptacle instead of on the streets, you have a better chance of keeping your municipality clean. The Bennett Bilt containers have strong springs that keep the doors closed, providing not only greater sanitation but eliminating fire hazards. Write for an illustrated catalog to the Bennett Mfg. Co., Alden, N. Y.

### Recreation Plans— Swimming Pools

**325** Wesley Bintz, consulting engineer, 301½ S. Washington Ave., Lansing 25, Mich., specializes in swimming pool designs, park layouts, and memorial and community buildings. Write for data on his special designs.

### Getting More Water

**326** Ranney Water Collectors are used to preserve and collect pure underground water contained in the sands and gravels located beneath the surface of the earth. These Collectors produce from 2,000,000 to 17,000,000 gpd per unit. Write for literature to Ground Water Inc., 70 E. 45th St., New York 17, N. Y.

### New Super Sweeper

**327** Only one man is needed to operate Wilshire's new Model 1000 super sweeper, a fast, versatile machine that picks up everything from dust to pop bottles with ease and efficiency. For details write Wilshire Power Sweeper Co., 4615 Alger St., Los Angeles 39, Calif.

### Pole Diggers

**328** The Tel-E-Lect pole hole digger makes perpendicular holes regardless of the truck position and is adjustable for clean holes up to 8 feet in depth. Augers 9 to 16 inches in diameter are interchangeable, and the auger extension shaft of 6 to 8 feet makes it easy to reach difficult spots. Write Tel-E-Lect Products, Inc., Minneapolis 16, Minn.

### Cleaning Carburetors

**329** The Gumout Div. of the Pennsylvania Refining Co., 2686 Lisbon Rd., Cleveland 4, Ohio, will send you a catalog sheet on the Gumounter, a tool for cleaning carburetors right on the engine in about 20 minutes.

### pH Measuring Device

**330** The Coleman Model 18 AC pH electrometer has been designed to require just three steps: immersion of the electrodes in the buffer solution; setting of the temperature compensator to the buffer temperature; switching to the pH scale and adjustment of the meter to the buffer pH value. Write for Bulletin B-221 to Coleman Instruments, Inc., 318 Madison St., Maywood, Ill.

### Pipe Fittings

**331** The Kennedy Valve Mfg. Co., 1030 East Water St., Elmira, N. Y., offers in its Bulletin 104 a description of its complete line of cast iron, malleable, and bronze fittings. It covers the recent additions of cast-iron screwed, flanged, sprinkler, and heavy malleable fittings.

### Dozer Spreads, Compacts Garbage on City Landfill Dump

**332** The mobile, high-speed, 186-hp Tournadozer equipped to handle garbage disposal at city sanitary landfill dumps, offers faster job-to-job moves, faster dozing cycles. Low-pressure tires provide ample compaction, eliminate voids; speed and mobility mean extra time to stockpile dirt. For complete information write to R. G. LeTourneau, Inc., Peoria, Ill.

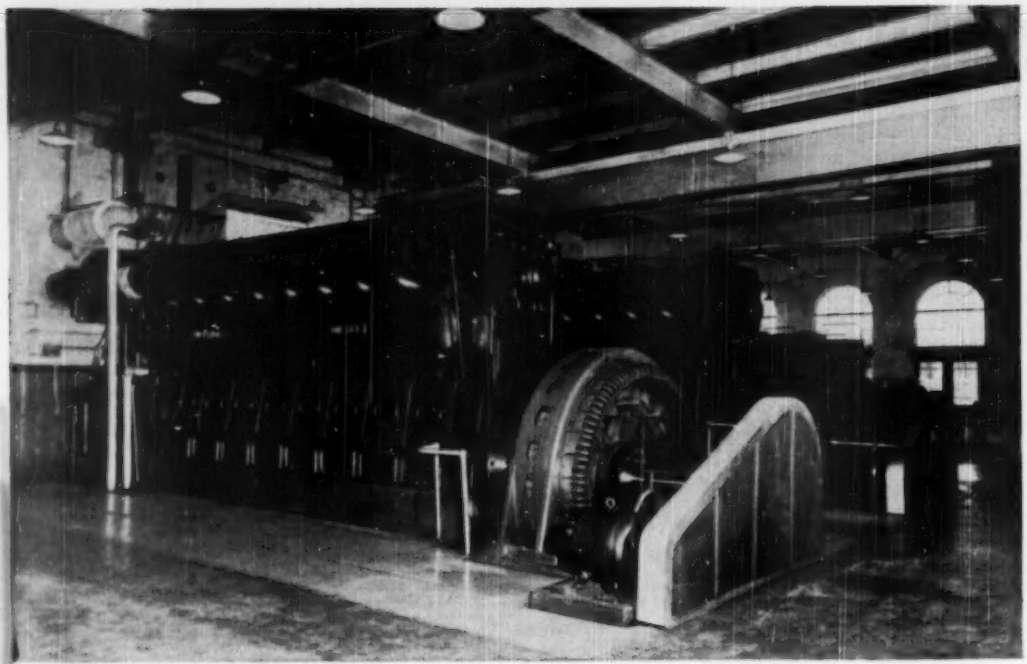
### Digger Attachment Does Work of Eight Men

**333** The Freeman Ditch Digger Attachment digs from 4 to 6 rods of three-foot Ditch per hour, uses as little as one quart of gasoline per trench rod, fits most any make of loader. For details write to Freeman Mfg., Inc., 3320 East 41st St., Minneapolis, Minn.

### Strap Street Signs To Any Post

**334** Steelbinder equipment makes it possible to strap traffic and street-name signs on any type of pole. This is a permanent installation that withstands hard buffeting by wind and rain. Write for literature to A. J. Gerrard & Co., 1952 Hawthorne Ave., Melrose Park, Ill.

*(Please Turn to Page 27 for More Literature)*



## THEY BURNED THE MORTGAGE IN LESS THAN 10 YEARS

● An Arkansas town started a power generating plant over 10 years ago with three Superior Diesels. When they threw the switch on this new venture they had a $49,000 debt. In less than 10 years they burned the mortgage.

Since this municipal power plant started operations, it has paid over $122,000 in power dividends to the city . . . in free street lights, and 80% discounts to schools, churches, and charities. They added another Superior Engine in 1945 . . . still another in 1946 . . . and bought their sixth Superior Diesel in 1949.

In addition to these dividends and necessary capital improvements, operating profits made it possible to repeal a special tax assessment. Today this Arkansas power plant is debt-free and making a substantial annual profit. Its customers get the lowest priced electrical power in the locality.

Careful supervision plus low cost Diesel power have added another remarkable success story to Superior's files. Chances are a Superior representative can help you accomplish the same results. Why not write and tell us when he should call, or if you prefer, send for our fully illustrated 20-page booklet.

**THE NATIONAL SUPPLY COMPANY**
**SUPERIOR ENGINE DIVISION**
Plant and General Sales Office: Springfield, Ohio

THE NATIONAL SUPPLY COMPANY NSCO

Superior DIESELS

Locomotive-Marine-Oil Field-Stationary

# These Are Free—Write For Them!

*Use the Coupon on Page 23*

### New Asphalt Handbook

335 The new, pocket-sized edition of the Bitumuls Paving Handbook covers paving methods, techniques, materials; includes data on tank cars, distributors, drag booms, handpumps, rates, airport road paving specifications. Also lists free booklets covering individual types of construction. Free to technical men or public officials; request on business letterheads, from Stancal Asphalt & Bitumuls Co. or American Bitumuls Co., 200 Bush St., San Francisco, Calif.

### Don't Lose Sewer Capacity

336 Clear your sewer lines regularly and maintain full carrying capacity with OK Champion power sewer cleaning equipment. This mechanism removes roots, dirt, and other obstructions from storm or sanitary sewers, and all men work above ground. Write for literature to the Champion Corp., 4716 Sheffield Ave., Hammond, Ind.

### Gunite for Repair

337 Gunite may be used for repairing such different types of structures as dams, tanks, sewers, tunnels, and reservoirs. Write for a booklet describing this type of quick and comparatively inexpensive method to the Pressure Concrete Co., 193 Emmett St., Newark, N. J.

### Custom Tailor Your Water Meters

338 Custom fitting the proper meter to the setting is a part of the service given by the Pittsburgh Equitable Meter Div., Rockwell Mfg. Co., Pittsburgh 8, Pa. And since this company makes all types of meters, the recommendations can be made without prejudice.

### Valves

339 Iowa valves are constructed with all working parts of bronze or bronze mounted to guard against corrosion as well as to permit freedom of operation both in wedging the gates into contact with the seats and in releasing them. Write the Iowa Valve Co., 201-299 N. Talman Ave., Chicago 80, Ill.

### Facts About Parking Meters

340 St. Paul gives some facts about its Dual parking meters—beginning with 1,036 installed December 6, 1946; 1,275 in 1947; 1,336 in 1948; now 1,600 in service. Expenditures for repair parts amounted to 1/6 of 1% of the meters' revenue. Two bulletins describe Dual meters: DU-505 discusses them for off-street parking; DU-504 describes Dual Gear-shift Automatics. Write The Dual Parking Meter Co., Canton 2, Ohio.

### Cast-Iron Pipe

341 McWane's bell-and-spigot pipe is easy to cut, tap, and lay. It is made of corrosion resistant cast iron and comes in sizes from 2 through 12 inches. Write the McWane Cast Iron Pipe Co., Birmingham 2, Ala.

### Street-Name Signs

342 Miro-Flex signs have letters embossed on 18-ga. galvanized, bonderized steel. The baked enamel finish comes in contrasting colors to insure long-lived visibility, and the tamper-proof mounting for poles or pipe minimize maintenance. Write for a catalog to the Miro-Flex Co., Inc., 1824 E. 2nd St., Wichita, Kans.

### Clean Streets— 2 Yards of Dirt at a Time

343 The South Bend Gutter-Snipe Model E pick-up street sweeper sweeps a path 6 feet wide. Three sweeping speeds and a 19-foot turning circle enable the sweeper to do a thorough job despite obstructions or grades as steep as 10%. Write the Municipal Supply Co., South Bend 23, Ind.

### Permanent Memorial Tablets

344 Record historical events and perpetuate the names of citizens your city wants to remember, with Erco cast bronze memorial tablets. For descriptive booklet write to Erco Mfg. Co., 2548 N. Elston Ave., Chicago 4, Ill.

### One-Man Bituminous Mix Plant

345 Made by the Kwik-Mix Co., Port Washington, Wis., and available in 10- to 14-cubic-foot sizes, the Kwik-Mix bituminous mixers can be set up for one-man handling or may be adapted as stationary overhead plants. Seven-second discharge is accomplished either into trucks or for direct pouring in patch work.

### Permanent Street Signs

346 Lake Shore street signs are of aluminum; that means no maintenance and high visibility both day or night. Write for complete information to Lake Shore Markers, Div. of Lake Shore Pattern Works, 654 W. 19th St., Erie, Pa.

### Flourescent Street Lights Attract More Shoppers

347 Bulletin 250 from the W. H. Long Co., 109 W. Illinois St., Chicago 10, Ill., deals with the subject of white-way fluorescent Post-Lite street lighting and its role in attracting commerce to the business section. This type of light is used today in France, England, Brazil—and as far away as Thailand and the Belgian Congo.

### Big Loads in Garbage Collection

348 The Heil Colecto-Pak is a totally-enclosed steel body with waist-high loading that compresses 24 cubic yards of wrapped garbage into its 12-cubic-yard body. Write for Bulletin BH47109, which describes both the 12-cubic-yard and a 9-cubic-yard model to the Heil Co., Dept. 4370, 3043 West Montana St., Milwaukee 1, Wis.

### Chain Saws

349 Homelite chain saws are constructed with perma-sharp, chrome-plated chain, linings-less automatic clutch, freedom from gears and oil seals, and automatic lubrication. Write the Homelite Corp., 107 Riverdale Ave., Port Chester, N. Y.

### Many Jobs With One Tractor Shovel

350 The Model HM Payloader is a Hough-built unit with a 1½-cubic-yard capacity to dig, load, carry, grade, level, and spread. It converts in a few minutes to a bulldozer, a crane, or a V snowplow. Write for literature to the Frank G. Hough Co., 710 Sunnyside Ave., Libertyville, Ill.

### Badges for Municipal Officials

351 The C. G. Braxmar Co. Inc., 216 E. 45th St., New York 17, N. Y., will send you a circular illustrating badges for police, fire, and city, county, and state officials. A variety of styles and metals is available.

### Curb and Gutter Forms

352 Binghamton Metal Forms, Inc., 15-21 Griswold St., Binghamton, N. Y., will send you a brochure illustrating the company's line of all-welded O-K steel forms for curb-and-gutter, straight curb, straight-battered, and flexible forms. Also included are descriptions of rectangular manholes, catch basins, inlets, and inside forms.

### All-Purpose Copying Machine

353 The Ozalid Streamliner makes copies of anything typed, written, drawn, printed, or photographed—in a matter of seconds. No specialists are required to operate the machine. Write for a bulletin to the Ozalid Div. of General Aniline and Film Corp., 50 Anson Rd., Johnson City, N. Y.

### Save with Diesels

354 One municipality reports that for the month of June, the Nordberg Duafuel engine, burning gas fuel, saved $1,006 in the cost of fuel and lube oil compared with the oil fuel and lube oil cost of the oil-burning diesels. This Duafuel is an 840-hp supercharged engine. Write for a bulletin describing engines ranging in size from 10 to 8,500 hp to the Nordberg Mfg. Co., Milwaukee 7, Wis.

### Plastic Lining Protects Concrete Sewer Pipe

355 Corrosion from sulphides is the problem in most concrete sewers, and a plastic lining for the sewer pipes is one economical answer. The Amercoat Corp., Div of the American Pipe and Construction Co., 4809 Firestone Blvd., South Gate, Calif., will send you data about T-lock Amer-Plate, a plastic lining with a T-lock design that insures good bond to the concrete it protects. Company tests show the plastic to be extremely tough, odorless, tasteless, and to contain no toxic materials.

### The Compressor-Tractor Handyman

356 Most municipal repair crews will agree that an air compressor with drills or tampers and other accessories does wonders when they have to tackle a tough maintenance prob'em. And the Schramm Pneumatractor is specially designed to aid in this work. This is a tractor that carries air-compressor equipment and drilling equipment on the after end. It can be equipped either as a Pneumajack, for drilling, as the Pneumatamp for backfilling, or as the Pneumabreaker for paving breaker. Write Schramm, Inc., West Chester, Pa., and ask for Bulletin PPJ-50.

### Powerful Compactor Makes Non-Settling Backfill

357 It's easy to use, has remarkable power, and gives you the results you need when you are backfilling a trench, making street repairs, backfilling behind retaining walls or other hard-to-reach places. The Wayer Impacter, Inc., 12 N. Third St., Columbus 15, Ohio, describes this handy soil-packing unit in Bulletin 25-O. The impacter strikes 1,900 blows of 1,250 foot-pounds per minute, can cover 45 to 60 square feet per minute, weighs only 240 pounds.

*(Please Turn to Page 28 for More Literature)*

The City of St. Paul cleans leaves, from 6 to 8 miles of streets daily, with their Athey Force-Feed Loader and reaps additional savings from its use on other work.

# FALL COSTS FALL...

## WHEN THE Athey FORCE-FEED LOADER TAKES OVER LEAF-LOADING WORK!

■ Falling leaves are a headache for city street departments . . . unless an Athey Force-Feed Loader is on the job.

This versatile, all-purpose machine makes short work of picking up and loading out fallen leaves. Windrowed naturally or with the aid of a Motor Grader, leaves are fed into hauling trucks in a steady stream . . . 100 city blocks a day — or enough to fill 100 five-yard trucks — can easily be cleaned in *one day* — a fraction of the time usually required!

Here's savings in time and money . . . more than 30 men are freed for other work.

If you're not already enjoying the advantages of the Force-Feed Loader, it's time to see your Athey-"Caterpillar" Dealer. He can show how your city can save on every type of loading! See him now and leave your leaf loading worries behind!

**ATHEY PRODUCTS CORPORATION, 5631 W. 65th St., Chicago 38, Ill.**

Athey APCOR Products

**Athey FORCE-FEED LOADERS**

# Get These Free

*Use the Coupon on Page 23*

### Safety for Firemen

**358** The Scott Air-Pak safety breaking equipment protects the fireman from all toxic fumes by supplying fresh air. With his lungs and eyes protected, the fire-fighter can immediately enter a building to attack the fire at its source. Write for information to the Safety equipment Div., Scott Aviation Corp., 191 Erie St., Lancaster, N. Y.

### Voting Machines Speed Results

**359** The Shoup electric vertical-type ballot voting machine insures complete secrecy and accuracy. There is no possibility of voting under the candidate's name instead of over his name by mistake, and the results are indicated for each candidate directly on the face of the machine when exposed at the close of the polls. Write the Shoup Voting Machine Corp., Girard Trust Co. Bldg., Philadelphia 2, Pa.

### Fluoridation of Water Lessens Tooth Decay

**360** For information about how to use sodium fluoride in water supplies and reduce children's tooth difficulties, write the General Chemical Div., Allied Chemical and Dye Corp., 40 Rector St., New York 6, N. Y.

### New Mechanical Joint-Tapping Sleeve

**361** The advantages of mechanical joint pipe have been incorporated in the design of the new Smith tapping sleeve, providing quicker assembly and savings on installation cost. Write for information to the A. P. Smith Mfg. Co., East Orange, N. J.

### Kill Mosquitoes With Capsules

**362** No equipment is needed to kill mosquitoes in large or small areas with Tossits, water soluble capsules containing high concentrations of new insecticides. Simply toss into water—insecticide spreads on the surface. Write to Sentco, Inc., 2400 Tamarind Ave., West Palm Beach, Fla.

### Kill Weed Roots

**363** Dolge SS weed killer penetrates down to plant roots and sterilizes the soil; this is for use where no vegetation is desired. Where turf grasses are maintained, E.W.T. selective weed killer will eliminate brush, dandelion, plantain, poison ivy, ragweed, sumac, and other obnoxious plants. Write for literature to the C. B. Dolge Co., Westport, Conn.

### Quick Delivery of Steel From Stock

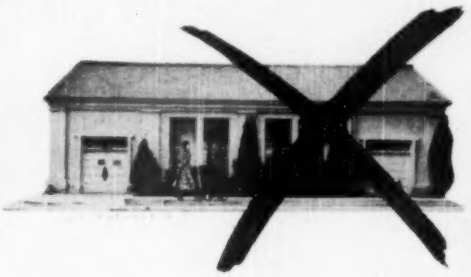
**364** Joseph T. Ryerson & Son, Inc., Chicago 80, Ill., has in stock the following steel products: carbon steel bars, structural shapes, plates and sheets, tubing, alloy and stainless steel, Inland 4-way safety plate, reinforcing steel, and Babbitt metal, machinery, and tools for metal fabrication.

### Complete Aerial Survey

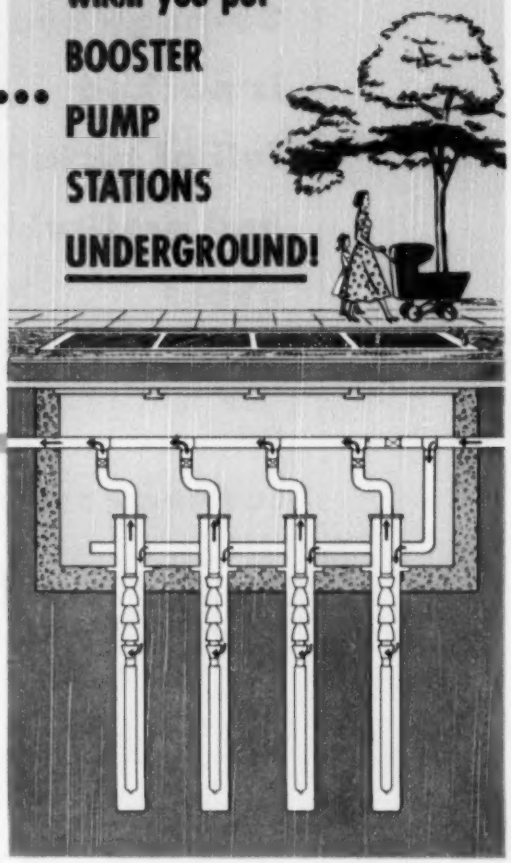
**365** For the annual salary of one engineer, the average city can have a complete aerial survey including a photographic mosaic, photographic atlas sheets, and stereoscopic photographs. From these, at minimum additional expense, can be supplied 5-foot contour maps, Planimetric maps, plans and profile sheets, and topographic and assessors' maps. Write for complete information to the Abrams Aerial Survey Corp., Lansing 1, Mich.

*(See Catalogs Listed on Page 30)*

# COSTS GO DOWN...



## when you put BOOSTER PUMP STATIONS UNDERGROUND!



## BJ SUBMERSIBLE PUMPS

## SAVE TAX PAYERS DOLLARS

Why tie up vital operating dollars in real estate, pump buildings, pump house maintenance and personnel when you can secure equal or better pumping performance *at much less cost* by putting your booster pump stations underground? Here's how Byron Jackson submersible pumps can save money:

**YOU SAVE REAL ESTATE COSTS** . . . there's no need to acquire special land. *Underground* booster stations can be placed beneath any city street or between street and sidewalk. They are out of sight and out of hearing.

**YOU SAVE ON CONSTRUCTION** . . . an *underground* pump vault can be completed at a fraction of the cost of a surface-type pump house.

**YOU SAVE ON OPERATING COSTS** . . . BJ submersibles do not require an attendant for oiling, packing inspection, or other daily care. There's no building maintenance either!

**YOU'RE IN TUNE WITH THE TIMES** . . . *underground* pump stations fit the trend toward concealed equipment and offer greater protection against fire, flood, sabotage and other disaster conditions.

The above sketch shows how four BJ 250 hp submersible pumps can operate in a 6' x 12' x 7' economically built underground vault between sidewalk and street or beneath the street surface. These pumps can be close-connected to the street water main with starter panel located in the vault or unobtrusively mounted on a nearby power pole.

***The BJ submersible pump with special submersible motor answers many municipal water pumping problems. Find out how these pumps can cut your pumping costs. Send the coupon for general installation data or write for specific engineering assistance.***

**Byron Jackson Co.**

PUMP DIVISION
*Since 1872*
**P.O. Box 2017, Terminal Annex, Los Angeles 54, Calif.**
*Offices In Principal Cities*

**BJ Submersible Pump, Dept. 50**
**Send me full information on the BJ Submersible.**

Name_____

Title_____

Address_____

City_____ State_____

**This BIG 36-page book is packed full of pictures and profitable tips about cutting timber and cutting costs**

Get your FREE COPY now!

*It tells you how to make money, too. Make sure you get yours. Mail the coupon today.*

**HENRY DISSTON & SONS, INC.**
**865 Tacony, Philadelphia 35, Pa., U.S.A.**
*In Canada, write:*
2-20 Fraser Ave., Toronto 3, Ont.

**Henry Disston & Sons, Inc. (Adv. Dept.)**
**865 Tacony, Philadelphia 35, Pa., U.S.A.**

Gentlemen:
I would like very much to have a free copy of your book "How To Cut Costs and Make Money with Chain Saws."

Name_____

Company_____

Street_____

City_____ State_____

My occupation is_____


# Catalogs for You

***Use the Coupon on Page 23***

## Long-Life, High-Pressure Water-Supply Lines

**366** The prestressed concrete steel-cylinder pipe made by the Price Brothers Co., 1932 East Monument Ave., Dayton 1, Ohio, consists of a structural concrete core, a steel cylinder, high tensile steel wire wound under tension, and a mortar protective coating. A special zinc-coated steel and rubber joint provides flexible watertight connection.

## Folding Tables

**367** A new folding table designed especially for municipal use is described in literature from Midwest Folding Products, 1844 West 14th St., Chicago 8, Ill. It comes in a natural blond finish unless brown is specified, and provides a smooth surface without screws or rivet heads. When folded for stacking, the table is 2⅛ inches thick.

## This Finegrader Means Finer Streets

**368** The Roadgrader Gauge Corp., P. O. Box 1087, Wilmington, Del., will send you literature showing how its gauge attached to your motor grader can assure a uniform fine grading to any desired depth on varying road widths. A rubber-tired third wheel is furnished to be used when it is necessary to run the gauges on concrete slab.

## Commemorative Tablets

**369** Bronze tablets are durable as well as attractive. A catalog from the U. S. Bronze Sign Co., Inc., 570 Broadway, Dept. AC, New York 12, N. Y., describes and illustrates some of its styles for signs, statues, cornerstones, hospitals, schools, and municipal buildings. Free samples, sketches, and estimates are also available.

## Provide Alternate Power For Pumping Stations

**370** Under today's conditions, no one can justify operating a pumping station for either water or sewage unless he has an alternate source of stand-by power. The Johnson combination drives insure this type of protection. They will allow you to operate either water or sewage pumps with electricity or internal combustion engines and thus keep a vital service in your community serviceable even in face of disaster. Write for catalogs to the Johnson Gear and Mfg. Co., Berkeley 2, Calif.

## Fast-Acting Ladder Truck

**371** The Mack Aerial Ladder Truck is designed for fast action plus crew safety. Mounted on a Type 85 chassis, the all-steel, fully hydraulic ladder has either 65- or 75-foot extension that can take heavy thrust loads from every direction. For catalog, write Mack Mfg. Corp., Fire Apparatus Div., Long Island City 1, N. Y.

## New Pavement Breaker

**372** The Mighty "B" Midget pavement breaker breaks 12-inch concrete, and is conventional automotive rear-end drive. It is manually or automatically operated. For information, write to R. P. B. Corp., 2751 East 11th St., Los Angeles 23, Calif.

## Safety with Fences

**373** The Stewart Iron Works Co., Inc., 1721 Stewart Block, Cincinnati 1, Ohio, will send you literature on its chain link wire fence, wire mesh partitions, iron picket fence, window guards, railings, steel folding gates, and ornamental iron lanterns, grilles, and plaques.

***(See page 32 for more Bulletins)***

# Don't Gamble with Your PARKING METER Dollars

## ...BUY UNPROVED METERS AND YOU MAY LOSE

## ...BUY MI-CO METERS AND YOU CAN'T LOSE

There are three types of parking meters: 1) Those jammed with intricate mechanism and delicate parts—all necessary for their operation, but potential trouble spots. With such meters *you could easily lose.* 2) Those which have reduced the number of parts to a certain extent, but are still plagued with costly down-time and high maintenance expense. *Here again you gamble, and may lose.* 3) Then there is the MI-CO Meter with fewer moving parts than any other parking meter manufactured. *With MI-COs you can't lose.* Here's why:

The reduction of moving parts (potential trouble spots) to a minimum, together with unusually rugged, simple construction, assures considerably lower maintenance which results in higher earnings over longer periods of time. Records from installations everywhere attest the fact that MI-CO Meters earn more because they are seldom out of order. And when they do need attention, it's a simple procedure to adjust them. Furthermore, MI-COs maintain their high productivity many years—some installations more than ten years old are still producing as well as when they were put into operation.

Check the record of meters that have been on the streets from five to ten years and more. Compare the earnings of MI-CO Meters with other makes. When you do, we are confident your choice will be MI-CO. May we send you all the facts?

**MI-CO METERS, 231 Court Street, Covington, Ky.**

*Division of The Michaels Art Bronze Co., Inc.*

# COLE

## TANK DESIGNING BACKED BY 95 YEARS EXPERIENCE

*** Cole has specialized in the design, fabrication, and erection of elevated tanks for four generations. This long experience enables us to handle your assignment with dispatch, and to your complete satisfaction . . . We design, fabricate, and erect, in capacities from 5,000 to 2,000,000 gallons, with hemispherical, ellipsoidal, or conical bottoms.**

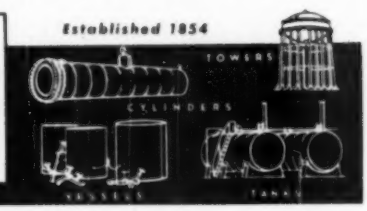
**Write for prices, stating capacity, height to bottom, and location.**

*Established 1854*

**R. D. COLE**

**MANUFACTURING CO.**

**NEWNAN, GA.**





# Free Literature

***Use the Coupon on Page 23***

### A Traffic-Paint Powder

**374** Tempo Airstripe is a paint powder recommended for use in marking traffic lines on asphalt and asphaltic concrete surfaces of streets or at airports. Mixed with water, it can be applied by brushing or spray machine. Manufactured by the Syncoloid Co., 618 So. Clarence St., Los Angeles, Calif.

### Mechanical Joints For Steel Pipelines?

**375** Yes, whenever steel transmission mains are selected, Dresser mechanical couplings are mandatory. The couplings insure that the joints will be water-tight and trouble free. The steel pipe insures great strength and durability if properly designed. To get the latest on these Dresser couplings, write Dresser Mfg. Div., 59 Fisher Ave., Bradford, Pa.

### An Office Printing Machine

**376** The Niagara stencil duplicator Model 250 prints 250 copies per minute. A predetermined counter automatically shuts off the feed at the end of the printing run. Other models for the smaller jobs are also available. Ask for a bulletin from the Niagara Duplicator Co., 725 Second St., San Francisco 7, Calif.

### Eliminate Painting For Traffic Marking

**377** Armor-Flex traffic markers are rectangular plastic discs that are set into the streets with a hot mastic. Traffic polishes the markers to a highlight reflection. Asphalt seal coats may be applied over the paving and the markers will shortly re-appear with full visibility. Write for a brochure to the Armor-Flex Co., St. Louis, Mo.

### Chlorine Treatment of Water

**378** A bulletin entitled *Chlorine Treatment of Municipal Water* has just been released by the Fischer & Porter Co., Hatbor, Pa., summarizing present-day processes and equipment and including flow diagrams and illustrations. Ask for Bulletin A-1A-4.

### Rubber Roads

**379** The advantages of rubber in paving are an increase in durability, greater resistance to frost damage in winter and to softening and melting in summer, and improved traction properties. For a full explanation of the entire process, write for *Firestone and Rubber for Paving Surfaces* to the Firestone Tire and Rubber Co., Akron 17, Ohio.

### Don't Let Oils Into the Sewer

**380** Manual B offered by the Josam Mfg. Co., 1302 Ontario St., Cleveland 13, Ohio, describes the company's Cascade grease interceptor. Special pages are devoted to a selection chart, selection formula, flow control data, and typical installation diagrams for plants where greases, fats, and oils are present in waste water.

### Traffic Line Marker Marks 4 Miles per Hour

**381** The Saylor-Beall Mfg. Co., St. Johns, Mich., will send you literature on its traffic-line marker, which is designed with each of the shields and each of the wheels floating independently, adjusting for all irregularity of pavement. The unit, called the Saylor-Beall marks two to four miles per hour.

DEPEND UPON...

# TRAXCAVATORS!

There's no closed season on TRAXCAVATOR advantages to municipalities of all sizes. From leaves to limestone, snow to sand, garbage to gravel, clay to concrete — TRAXCAVATORS handle them all. These tax-money savers are built around the maneuverability, the year-'round traction, the fuel and operating thrift of their "Caterpillar" Diesel Tractor team-mates. TRAXCAVATORS with 20,000 hours of public service to their credit are still at it! Five practical models — 1/2 to 4 cubic yards. Your TRACKSON-"Caterpillar" dealer can give you full details and show you TRAXCAVATORS in action. Or write to TRACKSON COMPANY, Dept. AC-80, Milwaukee 1, Wis.

*...For Low Cost Refuse Disposal*

Oneida, New York, (10,500 population) eliminates age-old garbage dump nuisances —rats, smoke, stench—with this T4 TRAXCAVATOR, operated by a one-man crew. The unit efficiently digs a broad, deep trench into which trucks dump garbage and rubbish. Then the sure-treading T4 crushes the waste, covers it with clean earth; makes sanitary-fill disposal work!

*...Or Loading Your City's Blizzards*

Powered by the *sure-starting* "Caterpillar" Diesel Engine — given positive traction by the *sure-going* tracks — this T4 TRAXCAVATOR breaks Tyler, Minnesota's blizzard blockade. It closed out ½-mile of roadway in 1½ hours; quickly loaded 5-ton trucks and was able to remove ice and packed snow *right down to pavement!*

TRAXCAVATOR® *The Original Tractor Excavator*

*Sanitation HTH* is your useful hypochlorination friend that never lets you down. Dry, free-flowing, easy to handle and store, this 70% chlorine carrier will meet your everyday sanitizing problems – regular chlorination of water supplies, reservoirs, tanks, new mains, filters.

When foul weather strikes and mains break, floods flash, or other emergencies arise, HTH provides the solution for large-scale, on-the-spot chlorination – *if you have it on hand!*

Don't risk being caught short. Replenish your HTH stock *now* and rely on this faithful friend – not only for today's routine chlorination jobs but for tomorrow's big ones as well. Mathieson Chemical Corporation, Mathieson Building, Baltimore 3, Maryland.

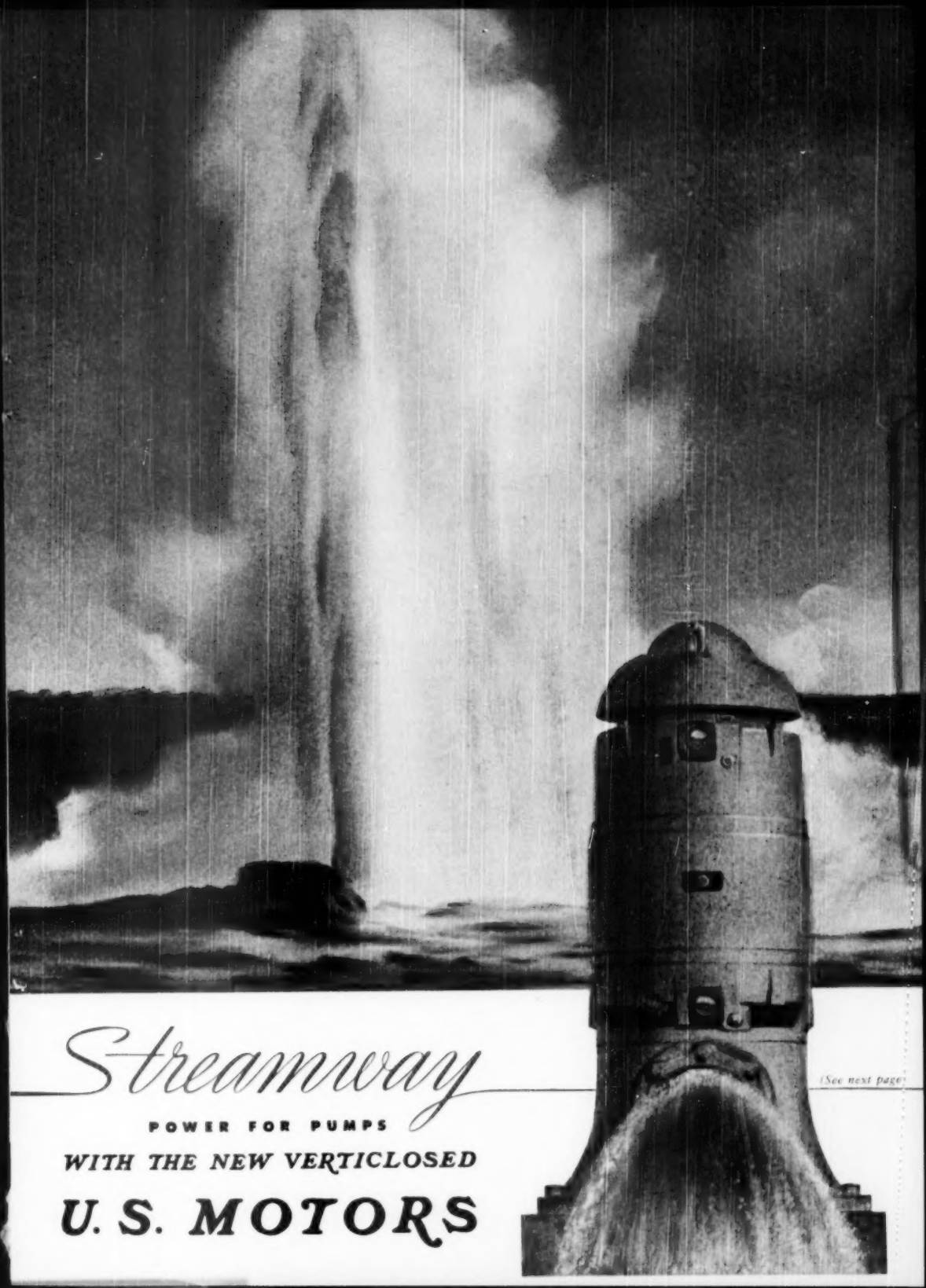
**Sanitation HTH is available in cases of nine handy 5-lb. cans or 100-lb. drums.**

Mathieson
CHEMICALS

Sanitation HTH . . . PH-Plus (fused alkali) . . . Liquid Chlorine . . . Chlorine Dioxide . . . Anhydrous Ammonia

9194

SERVING INDUSTRY, AGRICULTURE AND PUBLIC HEALTH



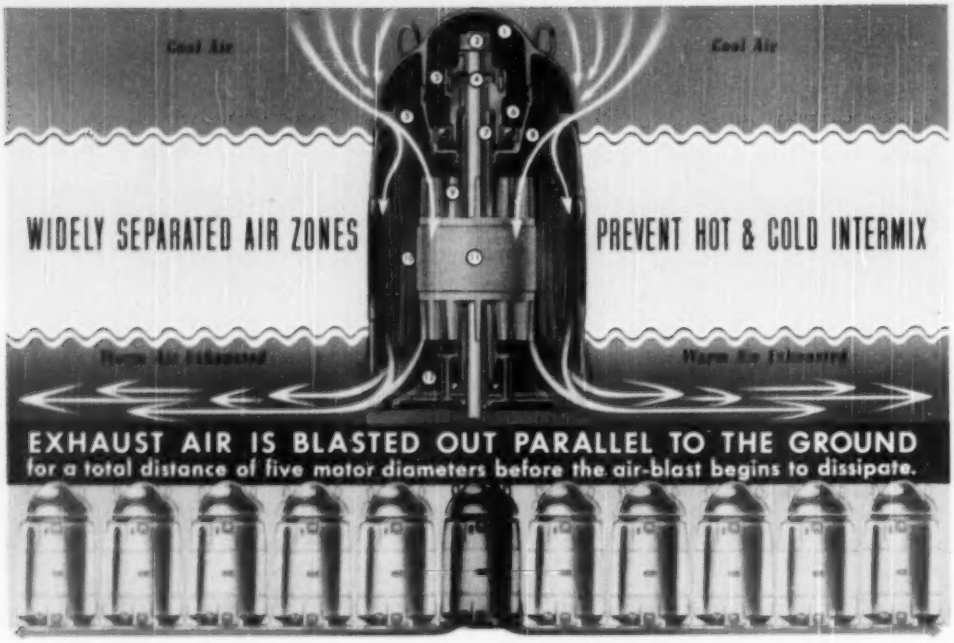
*Streamway*

POWER FOR PUMPS

*WITH THE NEW VERTICLOSED*

**U. S. MOTORS**

(See next page)


Cool Air
Cool Air
WIDELY SEPARATED AIR ZONES
PREVENT HOT & COLD INTERMIX
Warm Air Exhausted
Warm Air Exhausted
EXHAUST AIR IS BLASTED OUT PARALLEL TO THE GROUND
for a total distance of five motor diameters before the air-blast begins to dissipate.

1. Canopy
2. Adjusting Nut
3. Clutch
4. Pump Shaft
5. Air Ducts
6. Oil Reservoir
7. Hollowshaft
8. Thrust Bearing
9. Blower Vanes
10. Stator
11. Rotor
12. Oil Reservoir

## DOWNDRAFT VENTILATION

The efficient ventilation of a pump motor has been one of the most difficult and controversial designing problems the pump motor engineer was ever required to solve. Both the windings and bearings need continuous heat-relief. The air flow must be not only plentiful and rapid, but above all—***cool.*** Cool air is especially vital to the top thrust bearing.

Field tests convinced U. S. Motor engineers that *downdraft* was by far the most efficient method of ventilating the new U. S. Verticlosed Pump Motor. In U. S. *downdraft*, fresh incoming air immediately contacts the top thrust bearing; and warm exhaust air is prevented from re-entering the motor.

HOW? *By **inducting air at the top** of the motor, and expelling it at the extreme base, the cool air inlets are **widely** separated from the ground level warm air outlets. Furthermore, the large outlet vents are designed to blast out warm air horizontally for an approximate distance FIVE times the diameter of the motor base.* (In ordinary motors where warm air is **expelled from the top,** it is necessarily deflected **downward,** owing to the shape of the canopy. Hot exhaust air thus deflected downward is sucked back through intake vents below.)

U. S. downdraft suction forms a low pressure area around the inlet vents. Its purpose: to capture only fresh, local air. Integrally cast blower vanes rapidly blast this cool air throughout the motor. The top thrust bearing and its lubrication system *receive the first, fresh incoming draft.*

The downdraft next flows around the stator windings, absorbing their heat, and is then blasted out at the base. Not until the air is at least *five* diameters away, does the blast-force begin to disperse in noticeable degree. This scientific heat transfer adds years of life to the motor.

**The QUALITY LINE of Power**

**ELECTRIC MOTORS TO FIT THE NEED**

**VARIDRIVE — SYNCROGEAR — VERTICLOSED — UNICLOSED— UNIMOUNT AND TOTALLY-ENCLOSED**

Request Bulletin featuring any of these motors

**U.S. ELECTRICAL MOTORS Inc.**

**PACIFIC PLANT: Los Angeles 54, Calif. • ATLANTIC PLANT: Milford, Conn.**

Atlanta 3, Ga.; Bakersfield, Calif.; Boston 16, Mass.; Chicago 8, Ill.; Cincinnati 16, Ohio; Cleveland 14, Ohio; Dallas 9, Texas; Detroit 2, Mich.; Fresno 1, Calif.; Houston 4, Texas; Indianapolis 4, Ind.; Milwaukee 2, Wisc.; Minneapolis 2, Minn.; New York City 6, N. Y.; Philadelphia 2, Pa.; Pittsburgh 2, Pa.; San Francisco 7, Calif.; Seattle 4, Wash. *Distributors and Agents in all principal cities.*

**U.S. MOTORS**

—embody

ASBESTOS PROTECTION
NORMALIZED CASTINGS
LUBRIFLUSH LUBRICATION

# Good Riddance of Bad Garbage!

Garbage is certainly not one of our nicer words. The job of garbage removal isn't exactly nice either, but it's a municipal problem with which city officials must live every day.

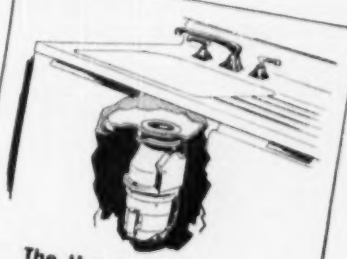
Garbage removal is becoming more and more costly. Furthermore, the old-fashioned "can and wagon" system is still a malodorous, unsightly and dangerously unsanitary method of garbage collection.

The Hotpoint Municipal Plan can make your community "A City Without Garbage" and eliminate the cost of garbage collection from your budget. A complete, factual presentation, based on experience and written specifically for municipal officials, is available for your study. This plan is being presented at the request of many municipal governing bodies through the country, and we shall be glad to present it to you.

**Your community will gladly welcome the opportunity to enjoy:**

- *A convenient, new and modern garbage removal system.*
- *Health protection to the members of all families.*
- *Fly and rat pest reduction.*
- *Waste collection cost reduction.*
- *More digestion gas for use and sale.*
- *Elimination of food waste before it becomes garbage.*
- *Elimination of alley garbage can.*
- *Elimination of garbage collection problems.*
- *Elimination of garbage odors.*
- *True sanitation for your town.*

***And—it saves you money!***



**The Hotpoint Disposall® is easy to install in any sink . . . convenient . . . safe . . . odorless and economical. Simple to operate . . . keeps kitchens, sinks and hands clean. Does not overload or clog sewer systems.**

*Hotpoint will gladly make a comprehensive presentation of the Hotpoint Municipal Plan to the interested parties of your city government. Write, wire or phone Hotpoint Disposall Department, 5600 West Taylor Street, Chicago 44, Illinois.*

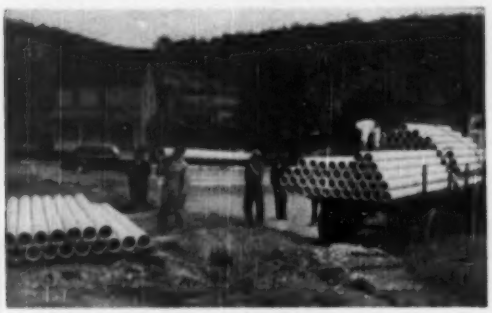
**Hotpoint Inc.**

**(A General Electric Affiliate)**

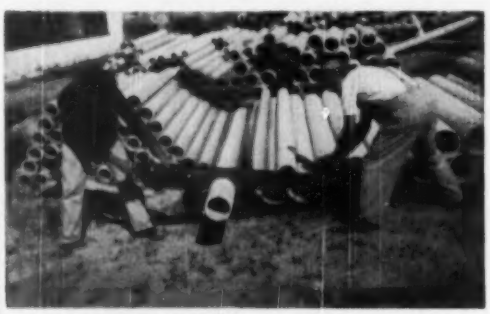
**5600 West Taylor Street, Chicago 44, Illinois**

# You can lay "Century" Pipe quickly—at less cost!

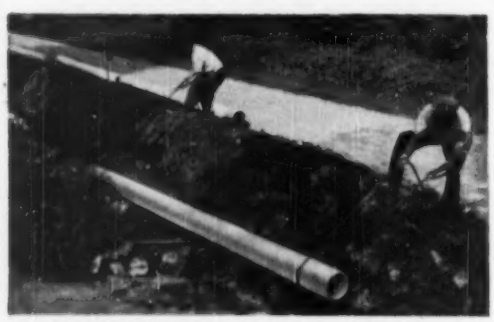
Actual on-the-job photographs show how even unskilled labor can lay easy-to-handle K&M "Century" Asbestos-Cement Pipe in less time, without special laying equipment.



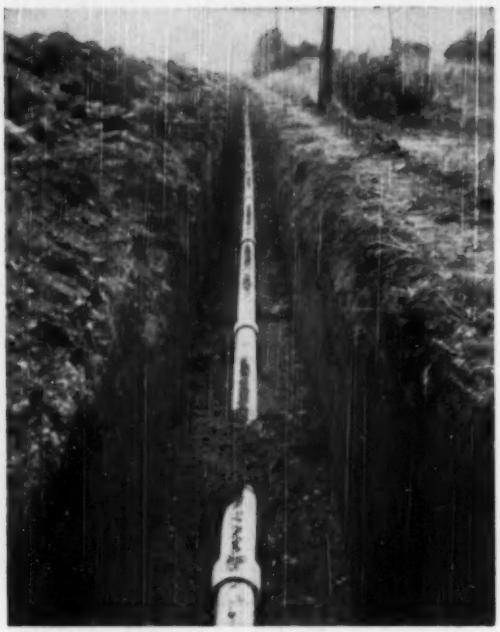
**STORE IT** wherever convenient—K&M Pipe is lightweight and easy-to-haul; it can be moved quickly without special handling equipment.



**NEED A SHORT LENGTH?** Cut it right on the job! No torches, no special vises, no cranes needed—K&M Pipe is quickly fitted!



**LOWER AWAY!** Note that only two men are needed to comfortably handle these full-length sections. This is time-saving, money-saving laying!



**STRAIGHT RUNS** like this—or curves up to 5° deflection per pipe length—are quickly laid with K&M Simplex couplings.

## The "Century" Simplex Coupling—simplicity itself

The "Century" Simplex Coupling is of the same composition as "Century" Pipe—asbestos fiber and cement. Two specially compounded round rubber gaskets are all that is required to make a permanent seal between pipe and coupling. The coupling is pulled into position quickly and easily by ordinary labor.

Before you specify or buy any water main, get the dollar-saving facts on K&M "Century" Asbestos-Cement Pipe. Your request for information will get prompt attention.

**K&M "Century" ASBESTOS-CEMENT PIPE**

**Nature Made Asbestos** . . . Keasbey & Mattison has made it serve mankind since 1873

**KEASBEY & MATTISON**
COMPANY • AMBLER • PENNSYLVANIA

# HOW Salisbury, Maryland USES G-E 2-WAY RADIO

The G-E 25-50 megacycle equipment in vehicles of the Salisbury Police Department continues to deliver superior service after more than 5 years of operation. Chief W. J. Chatham is particularly pleased with low maintenance cost of General Electric units.

This community solved all of its mobile communication problems with one answer—General Electric! Vehicles and fixed stations of the police department, fire department, public service company, rural electric cooperative, and the city's leading cab company are equipped with G-E 2-way radio systems performance-engineered for each job.

Adjacent channel operation, sharp and clear and free from annoying interference . . . day and night all-weather dependability . . . well-constructed, easy to service units . . . complete systems reasonably priced—these are the things to look for when your community needs radio communication. General Electric engineers are at your service. Let them study your communication needs now. No obligation, of course. Call the G-E office nearest you, or write: *General Electric Company, Section 1080, Electronics Park, Syracuse, New York.*

*You can put your confidence in—*

**GENERAL ELECTRIC**

General Electric Company—Section 1080
Electronics Park
Syracuse, New York

Send me complete information on G-E Radio Communication Systems.

NAME.....

TITLE.....

ADDRESS.....

CITY.....STATE.....

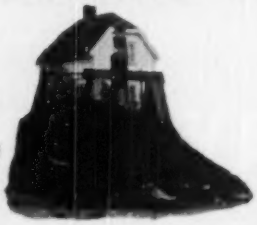
# PIPE CLEANING TOOLS

AROUND the WORLD

OSLO, NORWAY — SINGAPORE, M. P.

"Flexible" Power Bucket Machines, Power Drive, Rods and Tools make work easier in the Orient too.

"All this debris taken from 10" pipe. Section shows perfect job.



WATER LINES

SEWER LINES

*"Flexibles" in OSLO and SINGAPORE—as well as in the U. S. A.*

# "FLEXIBLE"

**UNDERGROUND PIPE CLEANING CO.** — **SEWER-ROD EQUIPMENT CO.**

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FOR WATER CONDITIONING

SOLVAY

For Water Softening ...SOLVAY Soda Ash

For Water Purification ...SOLVAY Liquid Chlorine

For Water Technical Service ...Call SOLVAY

SOLVAY SALES DIVISION

40 Rector Street, New York 6, N. Y.

BRANCH SALES OFFICES:

GET THOSE WEED ROOTS!

GO TO THE ROOT OF YOUR WEED PROBLEM WITH THESE DOLGE PRODUCTS

KILL WEEDS HERE!

**DOLGE SS WEED-KILLER**
Where no vegetation whatever is desired. Penetrates deep down to plant roots and kills. Sterilizes the soil, preventing normal sprouting of wind-blown seeds. Weeding the thorough, modern chemical way eliminates backbreaking toil and saves the cost of many labor hours.

**E.W.T. Selective Weed-Killer (2,4-D)**
Highly recommended for maintaining beauty of lawn and fairway. Works its way down into the roots of brush, dandelion, plantain, poison ivy, ragweed, sedge and other obnoxious plants, but does not injure most turf grasses.

Please write for descriptive literature explaining how these tested DOLGE products can best be used for your weeding requirements.

The C. B. DOLGE Co.
WESTPORT, CONNECTICUT

## SALES EXECUTIVE

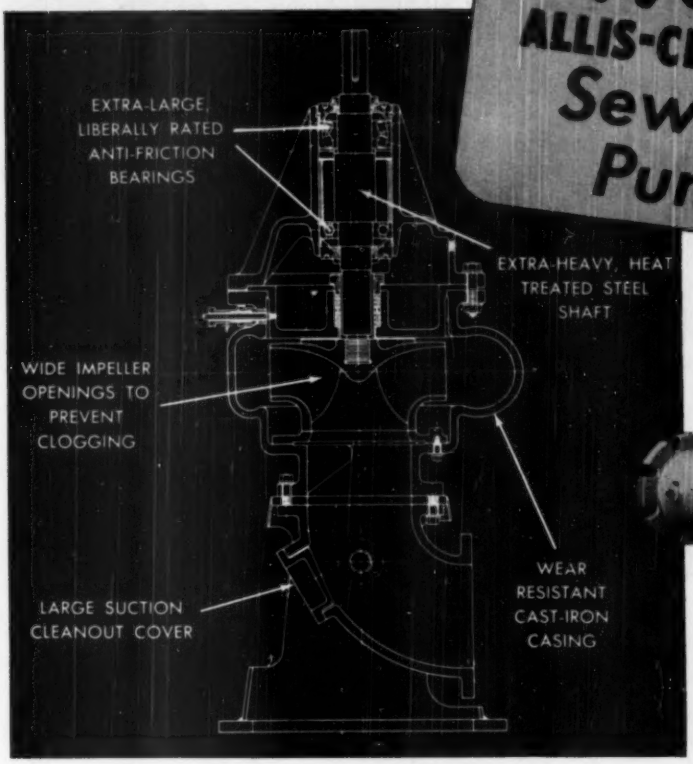
presently employed, wishes to act as manufacturers representative on the West Coast for products used in public works projects. Can provide office and warehouse facilities already established in LA area. References gladly furnished.

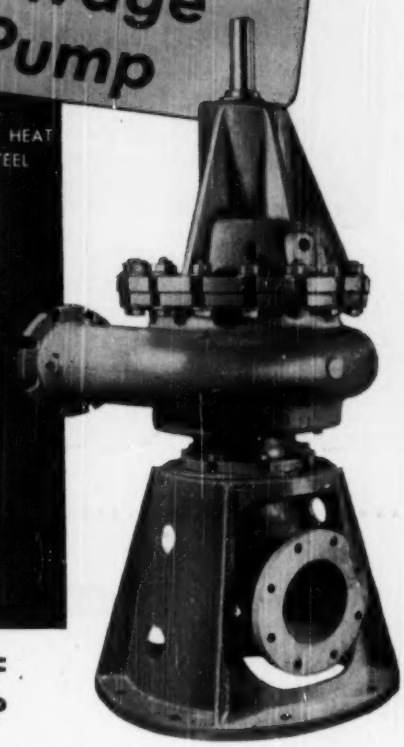
Write Box No. 338

THE AMERICAN CITY
470 Fourth Avenue
New York 16, N. Y.

# ANNOUNCING..

## New ALLIS-CHALMERS Sewage Pump


EXTRA-LARGE, LIBERALLY RATED ANTI-FRICTION BEARINGS
EXTRA-HEAVY, HEAT TREATED STEEL SHAFT
WIDE IMPELLER OPENINGS TO PREVENT CLOGGING
WEAR RESISTANT CAST-IRON CASING
LARGE SUCTION CLEANOUT COVER



## EXTRA-HEAVY CONSTRUCTION OF NEW DESIGN GIVES LONG PUMP WEAR, LOW MAINTENANCE

A SURVEY among sewage works engineers showed what features they wanted most in this new sewage pump: (1) Ability to "take it" under tough service, (2) Continuous operating efficiency, (3) Easy maintenance. And here's how A-C built those features right into this new pump.

There's an extra heavy shaft — heavier than in ordinary sewage pumps. To prevent clogging, there's a generous liquid passage with rounded-off impeller inlets. For easy maintenance, the husky cast-iron casing is split radially so the complete rotating element can be removed. Simply drop out the universal coupling and loosen main bolts... takes only a few minutes.

Standard sizes to 10,000 gpm. Can be built larger. For complete details, write for Bulletin 08S7504.

ALLIS-CHALMERS, 1185A SO. 70 ST.
MILWAUKEE, WIS.

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*Texrope* is an Allis-Chalmers trademark. A-3100

**World's Widest Range of Public Works Equipment**

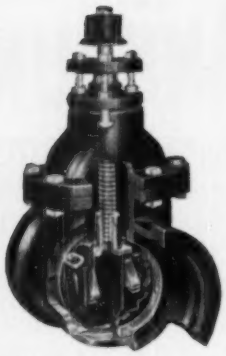
TURBINE-GENERATORS · BLOWERS and COMPRESSORS · TRANSFORMERS · UNIT SUBSTATIONS · MOTORS—*TEXROPE* DRIVES-CONTROL · CENTRIFUGAL PUMPS

# IOWA products

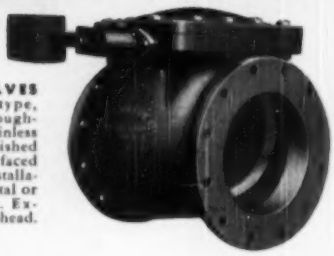
## meet your most exacting specification

Superiority of Design, Workmanship, and Materials Assures Efficient Trouble Free Operation . . .

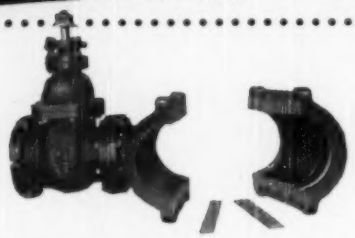
*In every job*



**IOWA GATE VALVES**—Simple, rugged construction, fully bronze mounted. Parallel seat, double disc type with independent solid bronze wedges and stem nut. Trouble free service assured.

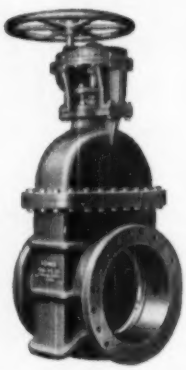


**IOWA CHECK VALVES**—Balanced swing type, bronze trimmed throughout. Equipped with stainless steel hinge pin. Furnished with rubber or leather faced disc if desired. For installation in either horizontal or vertical pipe lines. Extremely low loss of head.



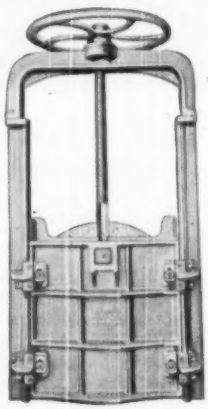
**IOWA TAPPING SLEEVES and VALVES**—Sturdily built, easy to assemble and center on pipe. All bolted type with lead strips for tight sleeve connections. Extra long body sleeves with heavy flanges amply protect the cut. All sizes available.

**IOWA FIRE HYDRANTS**—Latest Corey type conforming to AWWA specifications. Will not geyser when standpipe is broken. Unique design provides unrestricted water flow with extreme low loss of head.



**IOWA SQUARE BOTTOM VALVES**—Specially designed for throttling service in filter wash and pump discharge lines. Square bottom features can be built into gate valves of any pressure ratings.

**IOWA HYDRAULIC VALVES**—Superiority of design matched with sturdy construction meets severe, continuous filter service requirements. Available with either iron, brass lined or brass tubing cylinders.



**IOWA SLUICE GATES**—Heavy cast iron construction, fully bronze mounted. Provided with solid bronze adjustable wedges. Suitable for seating and unseating pressures. Wide range of sizes.

*Write today for descriptive literature.*

**IOWA** VALVE COMPANY

201-299 N. Talman Ave., Chicago 80, Ill. • *A Subsidiary of James B. Clow & Sons*

# *Are your sludge disposal requirements...*

Incineration

Drying for fertilizer

Drying or incineration

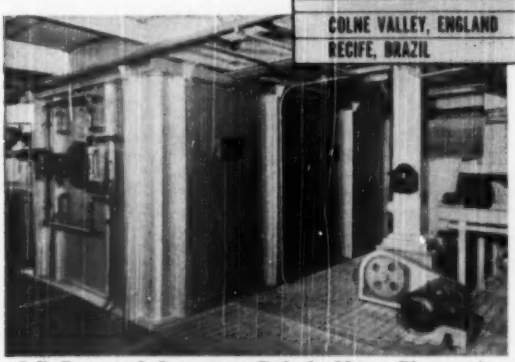
High temperature deodorization

?

**THE C-E RAYMOND SYSTEM** is the *only* proven method of sewage sludge disposal that can meet any combination of these requirements. It is flexible and efficient... provides for maximum utilization of waste heat.

The table (right) illustrates the adaptability of the C-E Raymond System to the specific requirements of any community.

| CITY | INCINERATION | DRYING | DRYING OR INCINERATION | HIGH-TEMPERATURE DEODORIZING |
|---|---|---|---|---|
| CHICAGO, ILLINOIS | | | | |
| CALUMET | | | ✔ | ✔ |
| SOUTHWEST | | | ✔ | ✔ |
| WEST SOUTHWEST | | | ✔ | ✔ |
| BUFFALO, NEW YORK | ✔ | | | ✔ |
| TENAFLY, NEW JERSEY | | ✔ | | ✔ |
| SPRINGFIELD, MASS. | | | ✔ | |
| NEENAH-MENASHA, WIS. | ✔ | | | ✔ |
| WATERVLIET, NEW YORK | ✔ | | | ✔ |
| CUYAHOGA FALLS, OHIO | ✔ | | | |
| DULUTH, MINNESOTA | | | ✔ | ✔ |
| MANITOWOC, WISCONSIN | | ✔ | | |
| SAN DIEGO, CALIFORNIA | | ✔ | | ✔ |
| STAMFORD, CONNECTICUT | | | ✔ | ✔ |
| SHEBOYGAN, WISCONSIN | | ✔ | | ✔ |
| BATTLE CREEK, MICHIGAN | | ✔ | | |
| SAN DIEGO, CALIF. EXTEN. | | ✔ | | ✔ |
| HOUSTON, TEXAS | | ✔ | | |
| LOS ANGELES, CALIFORNIA | | | ✔ | ✔ |
| FOND DU LAC, WISCONSIN | | ✔ | | ✔ |
| SAN FRANCISCO, CALIF. | | ✔ | | ✔ |
| BALTIMORE, MARYLAND | | ✔ | | |
| WATERBURY, CONNECTICUT | | | ✔ | ✔ |
| | | | | |
| COLNE VALLEY, ENGLAND | | | ✔ | ✔ |
| RECIFE, BRAZIL | | ✔ | | |



*C-E Raymond System at Duluth, Minn. Photo taken from operating floor showing part of furnace.*

*All inquiries on the C-E Raymond System should be directed to the nearest office of The Dorr Company, world sales representatives in the Sanitary Engineering Field.*

*In sewage treatment...there's a Dorr Unit for practically every step in every flowsheet.*

DORR

RESEARCH ENGINEERING EQUIPMENT

DORRCO

**THE DORR COMPANY, ENGINEERS**
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**RESEARCH AND TESTING LABORATORIES**
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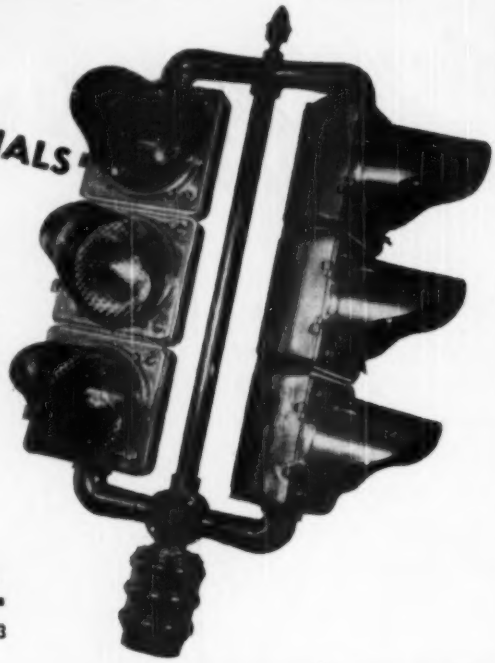
**SUGAR PROCESSING**
PETREE & DORR DIVISION, STAMFORD, CONN.
**ASSOCIATES AND REPRESENTATIVES**
Dorr Technical Services and Equipment Are Also Available Through Associated Companies and Representatives in the Principal Cities of the World. Names and Addresses on Request.

# AUTOFLOW TRAFFIC SIGNALS



- Universal mounting and adjustment
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- Dust and weather proofed throughout
- Lightweight sectional construction
- Sections and parts 100% interchangeable
- Span-wire, mast-arm, bracket, pedestal or pipe mounting
- Spun aluminum Alzak reflectors
- Adjustable lamp focusing
- No tools required for inspections or adjustments

*For Further Information, write or wire*

**SOUTHERN SIGNALS, INC.**

**222 Beach Street** **Box 1303**
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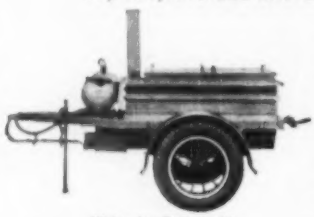
**Connery's Style W Heating Kettle Made in 75, 110, 165 and 210 Gallons.**



For speedy heating of Tar and Asphalt for road, street and airport runway repairs use Connery's style W kettle, the most efficient heating kettle of its kind.

*Write for Bulletin 87.*

**CONNERY CONSTRUCTION CO.**
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In parks and on public grounds throughout America you will find smooth velvety lawns built with time proven Dickinson lawn grass seed. Quality seed, blended according to formulas that have been tested and improved throughout the years. Write for complete information.

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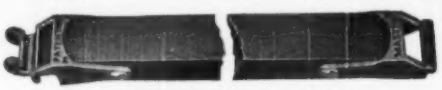
# SURE GRIP SEWER RODS and ACCESSORIES

The REGULAR, a light rod,
Fir stock 1¾ x 1¾ inch square.

are joined together with a dual lock forming a rigid chain that will float. They can be coupled or uncoupled upon the street if desired. Made in two sizes.



The MASTER, a heavy duty rod,
Fir stock 1⅓ x 1⅓ inch square.

*Write for catalog on complete line of sewer cleaning equipment.*

**EXPANDING SEWER MACHINE CO.**
**NAPPANEE, IND.**

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in BETTER WATER STORAGE

Elevated Steel Tanks

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Dependable water service for the progressive community is marked with distinction by P-DM Elevated Steel Tanks. Handsome in appearance, efficient in performance, economical to use and maintain, Pittsburgh-Des Moines Tanks are always a sound investment. *Write for our latest Water Storage Brochure.*

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| | | | |
|---|---|---|---|
| PITTSBURGH (25) | 3412 Neville Island | DES MOINES (8) | 913 Tuttle Street |
| NEW YORK (7) | Room 915, 270 Broadway | DALLAS (1) | 1217 Praetorian Bldg. |
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8-50

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1824 EAST SECOND STREET—WICHITA, KANSAS

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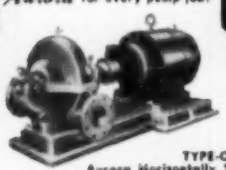
There is a PUMP by *Aurora* for every pump job.



TYPE-OD
Aurora Horizontally Split-Case, Double Suction, Single Stage Centrifugal Pump.

For general water supply for municipalities, industries, office buildings, institutions—also—for handling liquids, chemical solutions, oils etc., in a wide variety of industries. Write for Bulletin 105-M for further details.

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## FILTER SAND AND GRAVEL

Produced from an inland pit hence free from river contamination and foreign matter.

Shipment in bulk or bagged.

Many of the larger filter plants throughout the United States are equipped with our products.

*Prompt Shipment*

*Inquiries and orders solicited*

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# Here's a *Better way* to maintain Poll Lists

**Lists are always up-to-date.** That's why progressive election officials everywhere are using Flexoprint Panels for maintaining lists of registered voters!

**Faster...Less Expensive...More Accurate**

Typewritten die-cut cards are filed by street and number on district or precinct panels. Old cards are quickly removed, new ones inserted without changing the sequence of other cards on the panel. Instantly ready for photographing and fast, low-cost reproduction by photolith process.

Copywriting, typesetting, proofreading are "out" with the Flexoprint way! Cuts down errors, costs, time and office space required. Take Poll Lists off the "headache list" with Remington Rand Flexoprint!

**Flexoprint Panel Trays** used by DuPage County, Wheaton, Ill. Twenty Counties in Illinois alone have installed this economical, efficient system of voters' Registration Lists.

**"Now! The Modern Way"**—illustrated folder containing complete description of the efficient Flexoprint System for Voters' Registration Lists will be sent to you on request. Just call your nearest Remington Rand Branch Office for a copy of KD 295, or write Management Controls Reference Library, Room 2140A, 315 Fourth Avenue, New York 10, N.Y.

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**THE MODERN WAY TO ATTACH STREET SIGNS and HIGHWAY MARKERS**

For permanent installations we recommend Stainless Steel Strap and Galvanized Steel for semi-permanent applications. Complete accessories available in both metals.

*FREE DEMONSTRATION—*

Without cost or obligation, we will demonstrate the A. J. Gerrard Improved Way to secure a sign.

*Write for name of nearest representative.*

**A. J. Gerrard & Co.**

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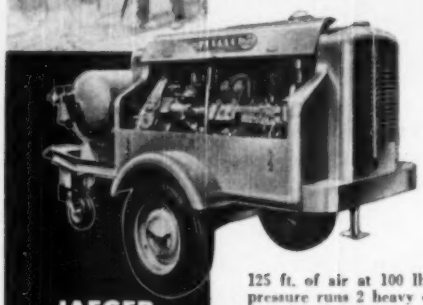
(Chicago Suburb)

# 4 days' work
## now done in 3



**JAEGER MODEL 125** obsoletes the 105,

125 ft. of air at 100 lbs. pressure runs 2 heavy or 3 medium breakers at top efficiency—doing 30% to 40% more work than same tools with 105 ft. of air.

All Jaeger "new standard" sizes give you comparably increased production.

*See your Jaeger distributor or ask for Catalog JC-8*

**The JAEGER MACHINE CO.**
Columbus 16, Ohio

Other "new standard" ratings are 60—185—250—365—600 cfm.

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You demanded it! Goldak produced it! The "Dualtronic"... an electronic instrument that does the work of 2 machines effectively and efficiently. One man simple operation! Ruggedly built! Lightweight! Guaranteed!

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## PROTECTION PLUS

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... All fittings, hinges and locking devices have bolts *on the inside*, secure from tampering.

... Heavily galvanized by a special process, Realock Fence is weather-resistant, extra strong and durable ... costs little or nothing for maintenance.

*For additional features and free estimate consult your classified telephone directory — or write direct.*

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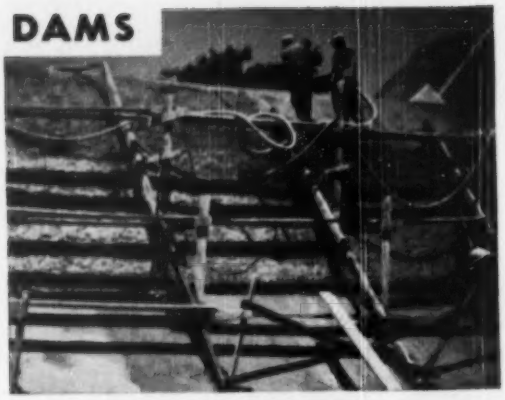
This Burroughs is a complete accounting machine . . . it can do almost any job in your office. And it is a machine on which any operator—even an inexperienced one—can keep books faster, more simply, more economically.

Call your local Burroughs office, or write to us, for the booklet *Streamlined Accounting,* which gives the full story of the Burroughs governmental accounting machine's versatility and usefulness to you. Burroughs Adding Machine Company, Detroit 32, Michigan.

*WHEREVER THERE'S BUSINESS THERE'S* **Burroughs**

## DAMS



***repaired speedily with "GUNITE"***

A 4-inch to 6-inch facing of reinforced "Gunite" was applied to the dam shown above which had badly deteriorated. This "Gunite" treatment restored this structure to years of further usefulness.

Let our engineers inspect your dams and give you repair-costs estimates for work done by experienced crews. No obligation. Our operations are nation-wide.

***Write for our 48-Page Gunite Booklet***

**PRESSURE CONCRETE CO.**

193 Emmett St., Newark 5, N. J. • 315 South Court St., Florence, Ala.
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## LOW-COST WATER

***from Caisson Wells***

The Caisson Well, a large reinforced concrete well with a diameter 7 to 20 feet, or more, may solve your water problem economically and permanently. Highly efficient in water bearing formations, as shallow as 10 feet. Life-long installation requiring practically no maintenance.

***Write for information***

**CAISSON WELLS, INC.**

*Ground Water Engineers and Contractors*

**33 W. 42nd Street, New York 18, N. Y.**

## THE NEW WESTCHESTER UTILITY and BURNING CART

***THE PORTABLE INCINERATOR***

***Burns all DRY REFUSE with ONE Handling***

**CLEANER GROUNDS — *QUICKER***

With this cart, one man does the work of many — in ONE operation. Leaves, brush cuttings, etc., are burned on the spot; ash catcher protects grass. Big 18 cu. ft. capacity and perfect balance mean bigger, easy-to-handle loads in transferring or carrying materials for compost.

**ALL-WELDED**

Length 6' overall; height 3' 4"; capacity 18 cu. ft.; wheel-treads 21½" wide; sheet steel ash catcher; weight 95 lbs. Shipped uncrated by Railway Express, f.o.b. Yonkers, N. Y.

**$69.50**

**SAVES TIME SAVES MONEY**

*Last summer, the Chicago Bureau of Sanitation bought 2 of these carts. Last Fall, **they ordered 10 more!***

*Order today from*

**COUNTY SPECIALTIES**

**P. O. Box 626 — Port Chester, N. Y.**

*your city deserves the best —*
**UNITED STATES BRONZE TABLETS...**

**for signs, statues, cornerstones, homes, hospitals, schools, municipal buildings**

One of the country's largest plants devoted exclusively to bronze tablet work assures you of the *finest* in bronze at *lowest* prices. Free samples, sketches, estimates — prompt mail service. WRITE TODAY FOR FREE CATALOG!

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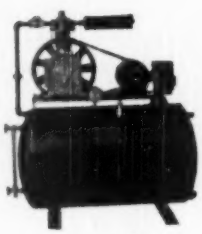
No. 1V-APCO

## APCO-V-APCO PRIMERS

**FOR CENTRIFUGAL PUMPS**
**AUTOMATIC POWER OR TANK PRIMERS**
**SINGLE OR DUPLEX UNITS**
**DUAL DRIVE WITH GASOLINE ENGINE**
**ALL UNITS ENTIRELY AUTOMATIC**

## AIR RELEASE VALVES

**FOR VENTING AIR OR GASES**
**17 TYPES**



No. 2V-APCO

**VALVE AND PRIMER CORPORATION** 127 NORTH DEARBORN ST., CHICAGO, ILL.

# The perfect playing surface—

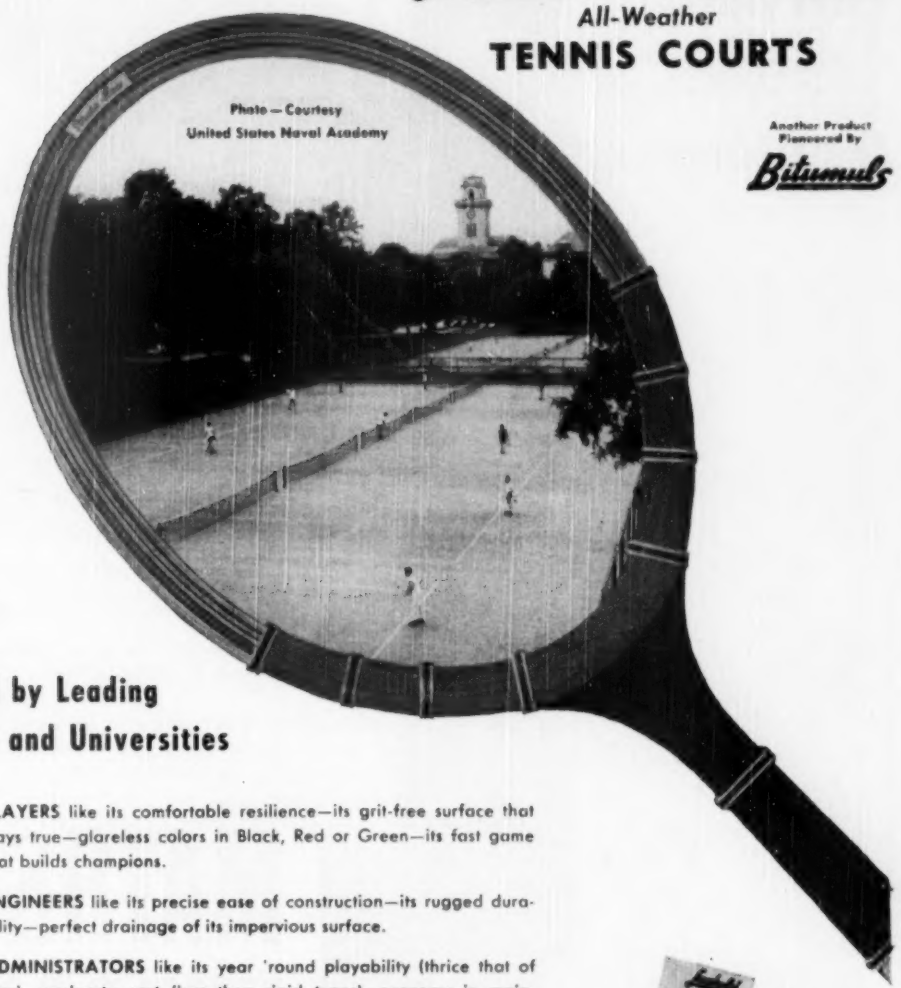
**Laykold** and **GRASSTEX**

*All-Weather*

## TENNIS COURTS

Another Product Pioneered By

**Bitumuls**



Photo—Courtesy
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## Adopted by Leading Cities and Universities

**PLAYERS** like its comfortable resilience—its grit-free surface that stays true—glareless colors in Black, Red or Green—its fast game that builds champions.

**ENGINEERS** like its precise ease of construction—its rugged durability—perfect drainage of its impervious surface.

**ADMINISTRATORS** like its year 'round playability (thrice that of clay)—moderate cost (less than rigid types)—economy in maintenance.

In all parts of the country, there are Laykold and Grasstex Courts—some near you. An inspection trip can easily be arranged.

*In the West*

**STANCAL ASPHALT & BITUMULS COMPANY**
200 BUSH STREET · SAN FRANCISCO 4, CALIF.
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*In the East*

**AMERICAN BITUMULS COMPANY**
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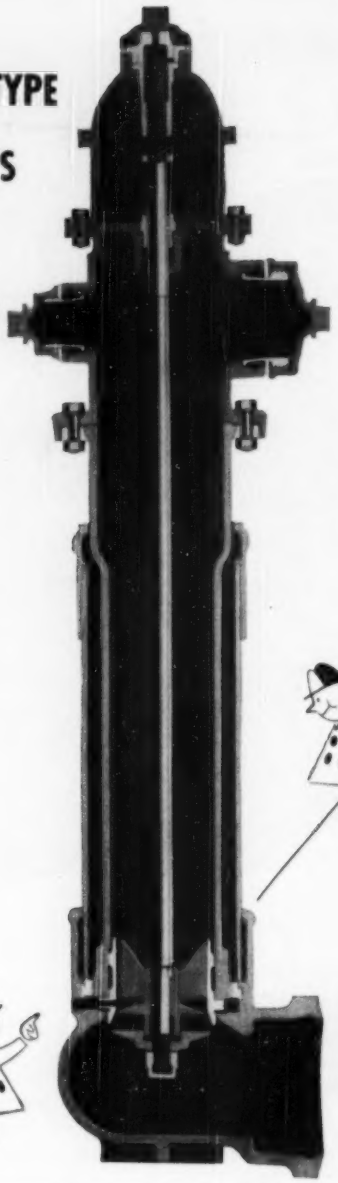
Columbus 15, O. · St. Louis 17, Mo. · Baton Rouge 2, La.
E. Providence 14, R. I. · San Juan 23, P. R. · Mobile, Ala.

Before building new courts or resurfacing old—send for these booklets. Ask for our specifications and free counsel.

## COMPRESSION-TYPE VALVE PREVENTS LEAKAGE AND FLOODING

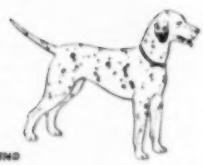


Traffic accidents are a problem to consider in buying fire hydrants today. What happens when a hydrant is the loser in an argument with a 10-ton truck? Your community can rely on the Mathews Modernized Hydrant to make the best of a bad job. Rest assured there will be no flood damage to cause law suits. Its compression-type valve prevents leakage—and replacement takes only a few minutes. Depend on Mathews, the leader for more than three-quarters of a century.

# MATHEWS HYDRANTS

**Made by R. D. Wood Company**
**Public Ledger Building, Independence Square**
**Philadelphia 5, Pa.**

Manufacturers of "Sand-Spun" Pipe (centrifugally cast in sand molds) and R. D. Wood Gate Valves



THE FIREMAN'S FRIEND

**MATHEWS MODERNIZED HYDRANTS SET THE PACE:** Easily maintained, because simple in construction • All working parts contained in replaceable barrel • Stuffing box cast integral with nozzle section • Head can be turned 360° • Replaceable head • Nozzle sections easily changed • Nozzle levels raised or lowered without excavating • Protection case of "Sand-Spun" cast iron for extra strength, toughness, elasticity • Operating thread only part to be lubricated • A modern barrel makes an old Mathews good as new

# *Powerful, New* Snowfighter

## 4-Wheel Drive PAYLOADER®

In the Winter — a drift-busting brute for the Snow Belt . . . it's a Model HM "PAYLOADER" equipped with "V" or Reversible Blade Plow.

In the Spring, Summer and Fall — with regular bucket it's an all-around excavating, earthmoving, loading and bulk materials handling tool.

The Model HM as a snow plow has the power, traction and speed ranges to crawl through heavy drifts or swoosh through lighter snows at speeds up to 16 mph. Four, big, pneumatic-tired wheels *with power on all four* provide the push that puts snow in its place — off the highway. Powerful hydraulic control exerts up to 3 tons of lifting capacity for "break-out" or tremendous down-pressure to dig in fast. Power-boosted rear wheel steering is easy and responsive . . . four speeds in reverse as well as forward assure slow or fast action in either direction. All-weather cab is optional.

For summer or snow, for all-season *go* the HM "PAYLOADER" is a year-round tax saver. Get the full facts from your Hough "PAYLOADER" Distributor or write The Frank G. Hough Co. 710 Sunnyside Avenue, Libertyville, Illinois.

Here is the Model HM with "V" Snow Plow. Also available with Reversible Blade Plow.

Equipped with regular bucket, the Model HM is a fast snow loader. Interchange of bucket and plow is quickly accomplished.

CATALOGS on the big 1½ yard Model HM or the four smaller sizes of "PAYLOADERS" are available, without obligation.

# Now

## More than ever before you'll want

## RIC-WIL *Prefabricated* Insulated Piping

Ric-wiL, for forty years the greatest name in insulated piping systems, has kept pace with every known development to produce the world's finest protection and insulation for underground or outside overhead piping systems. Alert and cost-conscious contractors and engineers realize the advantages of Ric-wiL prefabricated 21-foot "straight-run" sections.

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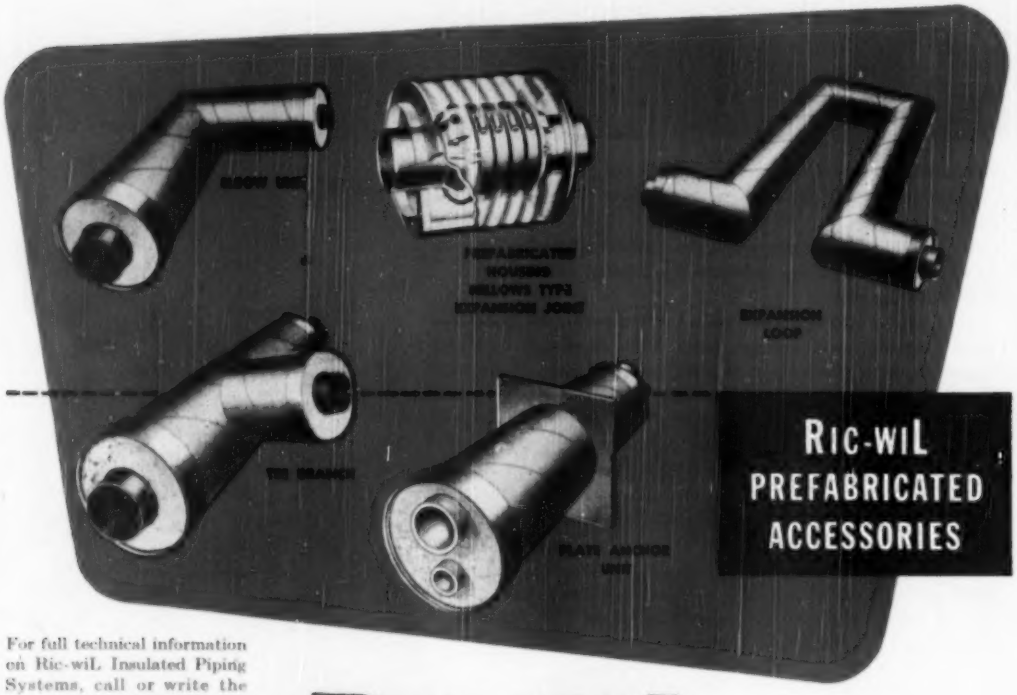
The use of the finest known materials, and exacting manufacturing standards give Ric-wiL Insulated Piping Systems "built-in" features for high efficiency performance and extremely long maintenance-free life.

Call the Ric-wiL office nearest you and our representative will be glad to discuss your specific problems at your convenience.




RIC-WIL
PREFABRICATED
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RIC-WIL
INSULATED PIPING SYSTEMS

OVERHEAD — THE RIC-WIL COMPANY · CLEVELAND, O. — UNDERGROUND

FOR FORTY YEARS THE GREATEST NAME IN INSULATED PIPING SYSTEMS

# WHO'S WHO *in* Safety

# MODEL 10 AUTOMATIC SIGNALS

## 1ST name in GRADE-CROSSING SAFETY

## 1ST in LIFE-SAVING PERFORMANCE

No other safety device protects the traveling public so surely, so dependably as time-tested Model 10 Automatic Signals. Model 10's have been in use nearly twelve years, yet NOT ONE FATALITY has ever occurred as a result of operation failure on the part of these signals.

## 1ST in RECOGNITION

The New York Museum of Science and Industry awarded a special Certificate of Merit to the manufacturer of Model 10's, after a national survey revealed that these automatic signals had established an unparalleled safety record.

## 1ST in SERVICE AROUND THE WORLD

Today, nearly a hundred railroads, in the United States and in many foreign countries, have chosen Model 10 Signals to guard their most hazardous crossings — PROOF that Model 10's are the

*Best Buy in Safety*

U.S. Pat. Nos., 2,137,195; 2,362,710; 2,372,579
Pats. in Canada 6-27-39 Other patents pending.

Write for Brochure
748—AC-8

## 1ST SUCCESSFUL Automatic GATE

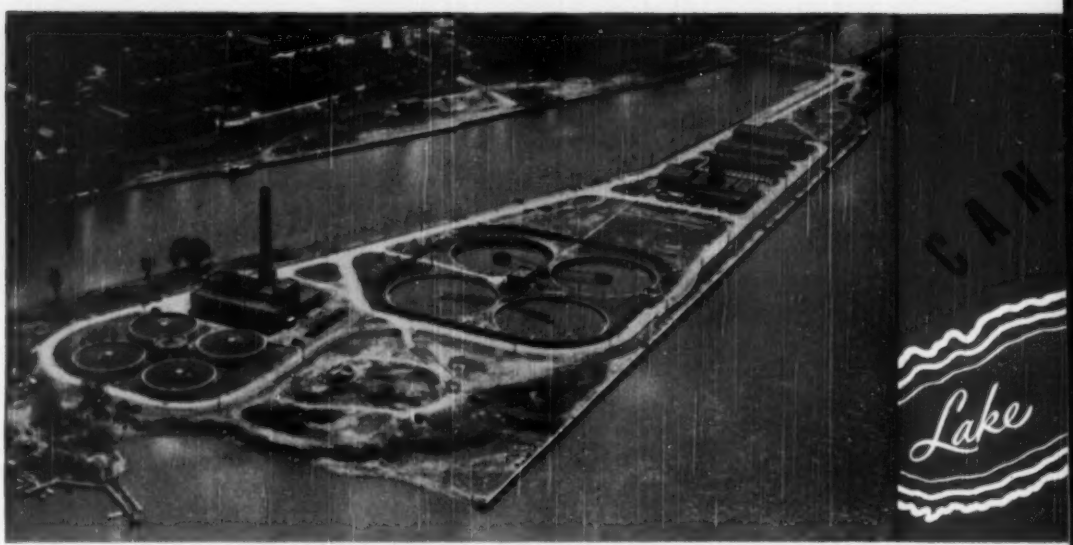
Model 10 design has been imitated, but Model 10 performance has never been duplicated.

# Model 10

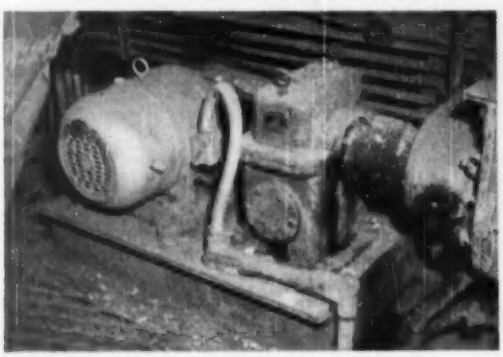
AUTOMATIC GRADE CROSSING SIGNALS
PRODUCT OF
WESTERN RAILROAD SUPPLY COMPANY
CHICAGO 8, ILLINOIS

LEADING MANUFACTURER OF GRADE CROSSING SAFETY DEVICES — MAKER OF RAILWAY SIGNALING ACCESSORIES

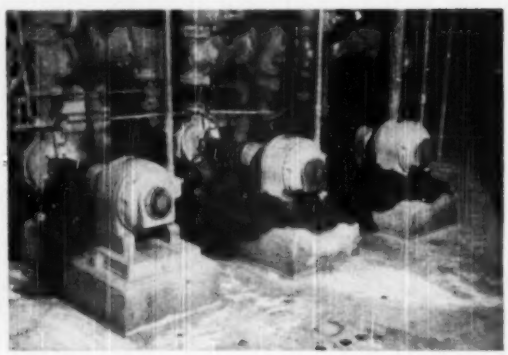
# CLEAN WATERS *at*




Airview of the Bird Island Sewage Treatment Works at Buffalo, N. Y. Treatment includes pumping, screening, aeration, chlorination, sedimentation, sludge digestion and incineration.



A G-E 7½-hp induction motor drives a sludge mixer. With their extra protection against physical damage, electrical breakdown and operating wear and tear, G-E motors assure long life and high service continuity.



Three G-E 7½-hp splashproof induction motors drive filtrate pumps for vacuum filters. These motors have already given 12 years of service although constantly subjected to moisture from dripping and splashing.

GENERAL ELECTRIC

# Buffalo HELP KEEP A TREATY

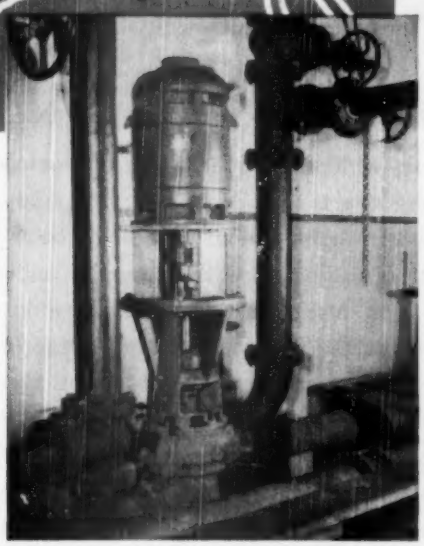
## G-E Equipped Treatment Plant Guards International Waters

Since its dedication in 1938, Buffalo's sewage treatment plant has helped make good a U.S.–Canadian Treaty signed over 40 years ago to protect international waters from pollution. Located on Bird Island in the Niagara River, the plant has helped keep waters clean from Buffalo to Lake Ontario.

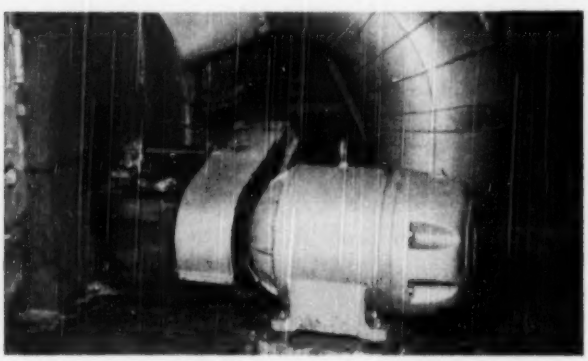
Plant officials attribute much of the success of the Buffalo plant's operation to the outstanding service given by some 100 General Electric motors. In many cases operating under the most severe conditions, the motors have given continuous and reliable performance.

General Electric can help your community get that new or improved sewage treatment plant by (1) assisting you and your consultant in formulating electrical plans, and (2) building public support through the use of G.E.'s full-color sound movie, *Clean Waters*.

Contact your General Electric representative early in the planning stage. *Apparatus Dept., General Electric Company, Schenectady, N. Y.*



Sludge circulating pumps for the digester tank are driven by G-E 10-hp vertical drip-proof motors. G-E vertical motors now have improved bearing lubrication and double-end ventilation for longer life and more efficient operation.



This is one of the G-E 50-hp, totally enclosed, fan-cooled induction motors used to drive exhaust fans for the sludge incinerator. The corrosive atmospheres in buildings like this call for motors that can take it.

GE CO-ORDINATED SEWAGE-PLANT ELECTRIFICATION

Without beam strength—or, for that matter—without all of the strength factors listed opposite—no pipe laid 100 years ago in *city streets* would be in service today. But, in spite of the evolution of traffic from horse-drawn vehicles to heavy trucks and buses—and today's vast complexity of subway and underground utility services—cast iron gas and water mains, laid over a century ago, are serving in the streets of more than 30 cities in the United States and Canada. Such service records prove that cast iron pipe combines all the strength factors of long life with ample margins of safety. No pipe that is provably deficient in any of these strength factors should ever be laid in city streets. Cast Iron Pipe Research Association, Thos. F. Wolfe, Engineer, 122 So. Michigan Ave., Chicago 3.

# CAST IRON PIPE

# Strength factors of Long Life!

*No pipe that is provably deficient in any of these strength factors should ever be laid in city streets*

## BEAM STRENGTH

When cast iron pipe is subjected to beam stress caused by soil settlement, or disturbance of soil by other utilities, or resting on an obstruction, tests prove that standard 6-inch cast iron pipe in 10-foot span sustains a load of 15,000 lbs.

## CRUSHING STRENGTH

The ability of cast iron pipe to withstand external loads imposed by heavy fill and unusual traffic loads is proved by the Ring Compression Test. Standard 6-inch cast iron pipe withstands a crushing weight of more than 14,000 lbs. per foot.

## SHOCK STRENGTH

The toughness of cast iron pipe which enables it to withstand impact and traffic shocks, as well as the hazards in handling, is demonstrated by the Impact Test. While under hydrostatic pressure and the heavy blows from a 50 pound hammer, standard 6-inch cast iron pipe does not crack until the hammer is dropped 6 times *on the same spot* from progressively increased heights of 6 inches.

## BURSTING STRENGTH

In full length bursting tests standard 6-inch cast iron pipe withstands more than 2500 lbs. per square inch internal hydrostatic pressure, which proves ample ability to resist water-hammer or unusual working pressures.

## SERVES FOR CENTURIES

# LOOKING FOR IMPROVED COAGULATION ?

**FREE INFORMATION ON REQUEST**

FROM THE

TENNESSEE TC CORPORATION
Atlanta, Georgia — Kirkland, Ohio

ON FERRI-FLOC, THE NEW FERRIC IRON COAGULANT. FREE 35 PAGE BOOK ON WATER AND SEWAGE TREATMENT WITH . . .

**FERRI-FLOC**

Dependable and long lasting, beautiful in action . . .

**"Rain-Wave"**

*Covers 50x50 ft. area furnished for hose or hoseless*

A SKINNER Quality Sprinkler that brings new beauty and health to lawns at a cost lower than you ever thought possible.

It slowly rocks a gentle, fan-like spray over an area approx. 50 ft. square. Uses 5 gallons of water per minute. Operates on usual city pressures. Available as a complete unit, or head only mounted on a special coupler for hoseless irrigation.

SKINNER SYSTEM OF IRRIGATION

*Write today for full particulars. No obligation.*

The SKINNER IRRIGATION COMPANY
501 E. Canal St., Troy, Ohio

Why destroy Base of Pavement to apply a New Top

## White Surface Heaters

These machines offer the quickest, cleanest, most economical method for repairing or resurfacing any bituminous pavement.

They melt 1" of old surface in 5 minutes. It can be scraped away and new top applied without damaging base course. This has been successful practice for years.

2 sizes: B-4, above, has 3x6' pan; Model B-1 has 6x6' pan, 6 burners. Square cutting edges. Dual fuel tanks. Hoisting winch. Can be towed on steel wheels, and moved by hand.

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Elkhart **White Mfg. Co.** Indiana

*how to please more taxpayers*

# all winter ... all year

*on a limited budget*

You can stretch your snow dollars, as well as your road and street dollars, by investing in equipment with all-round, all-year usefulness — versatile Allis-Chalmers Motor Graders.

They are not tied down to special jobs. Allis-Chalmers Motor Graders are designed and engineered for toughest snow removal work . . . as well as for handling grading, scarifying, oil mix, ditching and bank sloping.

An exclusive tubular frame absorbs shocks and strains, also protects control rods. Tandem chain drive and proper weight distribution provides the traction to keep driving ahead in toughest snow plowing. There is instant starting and operation on diesel fuel . . . smooth, economical, dependable 2-cycle diesel power. High travel speeds enable you to go quickly from one job to another. Every operator comfort . . . cabs and other accessories.

There is a right size Allis-Chalmers Motor Grader to fit your needs . . . and pocketbook. Get the full story from your A-C dealer . . . NOW! Make your SNOW DOLLARS BUY MORE.

**CHOOSE THE GRADER TO FIT THE JOB FROM THIS COMPLETE LINE**

**A-C MOTOR GRADERS with Baker "V" Plows**

| MODEL | BRAKE HP. | ENGINE |
|---|---|---|
| AD-4 | 104 | 2-Cycle Diesel |
| AD-3 | 78 | 2-Cycle Diesel |
| BD-3 | 78 | 2-Cycle Diesel |
| BD-2 | 50.5 | 2-Cycle Diesel |
| D | 34.7 | Gasoline |

(Wings available for AD and BD models . . . scarifiers for all models, for removing ice. Also: snow bucket for Model D.)

**LOAD or PLOW SNOW with the versatile Model D . . . scarify, maintain roads and streets. Only low-cost motor grader with tandem drive and other big grader features.**

**. . . for greater production . . . for easier operation . . . for simplified servicing**

**ALLIS-CHALMERS**

**TRACTOR DIVISION • MILWAUKEE 1, U. S. A.**

*Painted for U. S. Pipe & Foundry Co. by Paul Lauve*

**There's a solid satisfaction in specifying cast iron pipe. You know that your choice coincides with the judgment of leaders of your profession the world over. And when the line is backfilled, you are confident that it will serve throughout a long life at a low annual maintenance cost. This has been true of cast iron pipe for centuries; yet in the fifty-one years since our Company was founded, notable advances in manufacturing methods and controls have been made, resulting in a finer, more uniform pipe. United States Pipe and Foundry Company, General Offices: Burlington, N. J. Plants and Sales Offices Throughout U. S. A.**

**U.S.**
**cast iron**
**PIPE**
FOR WATER, GAS, SEWERAGE AND INDUSTRIAL SERVICE

# EXTRA POWER FOR TOP PERFORMANCE

## MACK type 21 PUMPER

Capable of mastering the biggest pumping jobs with ease . . . of fast response over the hilliest roads . . . the powerful Mack Type 21 pumper is widely regarded as the "heavy artillery" of land fire-fighting forces.

Like all other Mack apparatus, the Type 21 is a perfectly balanced and finely coordinated unit for easy handling and nimble performance. Its 275 hp engine guarantees fast runs as well as providing power-to-spare for its 1250 gpm pump. And these units are built into a rugged chassis designed throughout for long-lived, trouble-free Fire Department Service.

Mack can build your Type 21 to meet your individual fire-fighting requirements in cab style, number of discharge gates, deck nozzles, tanker or booster equipment, front or rear extra suction intakes, or other specialized designs. Remember, too, that Mack builds a complete line of apparatus in all sizes to meet your every fire-fighting need. Yours are the world's finest fire fighters when you *Modernize with Macks.*

"THE BIG SQUIRT"-Bakersfield, California, takes pride in its new Mack Type 21 triple combination pumper, shown delivering 2,250 gpm with a reach of 260 feet. Out of such performance has come its local nickname of "The Big Squirt".

*Here's to Seeing You at the I.A.F.C. Conference—September 12-15 at San Francisco*

Be Performance-Wise

**modernize with**

**MACK MANUFACTURING CORPORATION**
Fire Apparatus Division
Long Island City 1, N. Y.

Mack ...outlasts them all!

8514

TRIPLE COMBINATION PUMPERS—500 TO 2000 GPM . . SQUAD AND HOSE CARS . . AERIAL, CITY SERVICE AND QUADRUPLE COMBINATION LADDER TRUCKS

CITIES REPORT

## 50% Savings WITH TURCO MAXI-POWER SEWER CLEANING UNITS

Here's a machine that has the power and stamina to stand up under the most severe sewer cleaning conditions. Widely used all over America. Beautifully designed and constructed for highest efficiency. Now is the time to Modernize, Powerize and Economize with Turco Maxi-Power Sewer Cleaning Units.

WRITE FOR CATALOG: Get the complete construction and operating story and learn how you too can make substantial savings with Turco Units.

CHECK THESE

*Exclusive Features*

1 TUBULAR FRAME . . . highest strength-to-weight ratio of any form of structure.

2 ENCLOSED GEARING . . . completely dust and dirt protected with oil bath lubrication.

3 SEALMASTER BEARINGS . . . Lubrication sealed in and dirt sealed out . . . built to last a lifetime.

4 PENDULUM-MATIC LEVEL WIND . . . This spooling unit is not mechanically linked to the winch drive; consequently, it automatically compensates for any change in rope diameter, stretch, speed or wear. Patent No. 2,452,297.

5 THREE-SPEED TRANSMISSION . . . with built-multiple disc clutch . . . oil bath lubrication . . . built for rugged service.

6 POSITIVE CONTROL IMPULSES transmitted by Remote Control smoothly and accurately . . . no toggles or linkages to cause lost motion.

# TURBINE SEWER MACHINE CO.

5210 W. State Street • Milwaukee, Wisconsin, U.S.A.

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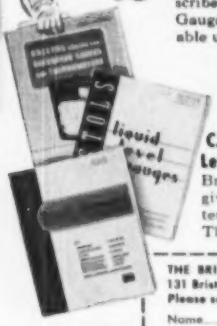
**C. Remote Measurement of Water Level.** 28-page bulletin describes new Bristol Series 500 Metameter which gives continuous record *in office* of water level in *remote* tanks and reservoirs. Thousands in successful operation.



A COMPLETE LINE FOR WATER WORKS

THE BRISTOL COMPANY
131 Bristol Road, Waterbury 20, Conn.
Please send bulletin checked. A ... B ... C ...
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Company .....
Address .....
City ..... State .....

BRISTOL

## THE M & M PORTABLE BRUSH GRINDER

Keep your city clean and gain valuable fuel at the same time. The M & M Portable Brush Grinder will produce this fuel "on the job." There is no necessity for hauling bulky loads of brush to the dump where they must be burned or become the unsightly home of vermin. Instead, with the Portable Brush Grinder, small chips are produced which are excellent as auxiliary fuel in the power plant or incinerator. Write for complete information.

MITTS & MERRILL

104 HOLDEN STREET • SAGINAW, MICHIGAN

# 4 questions every dump truck user should ask about new International 6-wheelers

**QUESTION: "I hear new Internationals are heavy-duty engineered. What does that mean to me?"**

**ANSWER:** "Heavy-duty engineered" means that extra stamina and durability are built into every one of the thousands of parts that go into new International 6-wheel Trucks. This gives you the long life and savings in operation and maintenance that have kept Internationals first in heavy-duty truck sales for 18 years.

**QUESTION: "What other assurance do I have that new International 6-wheelers will do a good job on *my* particular job?"**

**ANSWER:** From new valve-in-head engine to new bogie assembly, every new International 6-wheel Truck is *specialized* for years and years of outstanding 6-wheel truck performance. In addition, every model has been *proved* right from every standpoint in actual 6-wheeler operation.

**QUESTION: "What do new Internationals offer in the way of new advancements?"**

**ANSWER:** You get the new Comfo-Vision Cab—"roomiest cab on the road." You get the new third differential that eliminates the need for an extra propeller shaft and a power divider, thereby reducing truck weight. You get new Super-steering and new Super-maneuverability for easier handling and turns in the shortest practical circle. You get a new valve-in-head engine, new frame, new improvements from bumper to tail light.

**QUESTION: "Where can I find out *more* about how new International 6-wheel Trucks will cut my hauling costs?"**

**ANSWER:** Get in touch with your nearest International Truck Dealer or Branch. He'll gladly give you facts and figures on the right 6-wheel model for you.

International Harvester Builds McCormick Farm Equipment and Farmall Tractors...Motor Trucks Industrial Power...Refrigerators and Freezers

*Tune in James Melton and "Harvest of Stars," NBC, Sunday afternoons*

*ALL NEW, ALL PROVED*

**INTERNATIONAL TRUCKS**

INTERNATIONAL HARVESTER COMPANY CHICAGO

# BE READY...

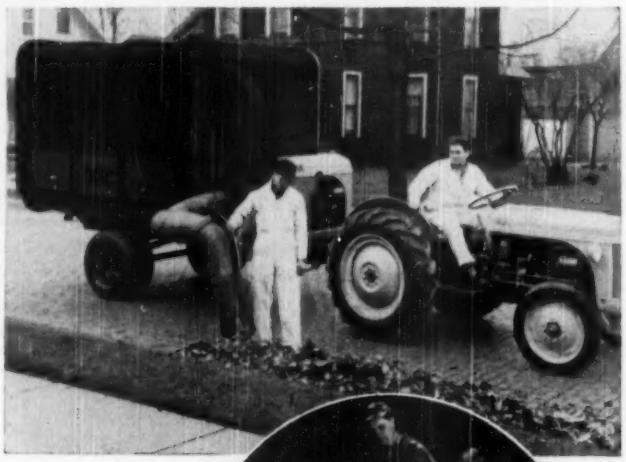
## ...for the Fall leaf problem

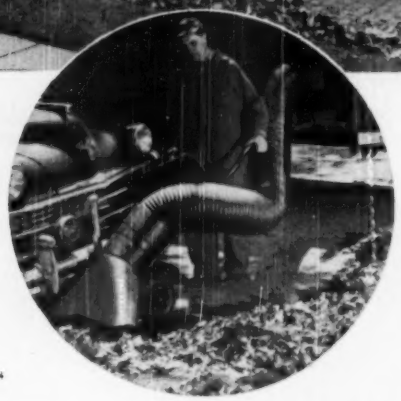
**AVOID CLOGGED SEWERS AND SLIPPERY PAVEMENT WITH Good Roads LEAF COLLECTOR**

If you are ready with a Good Roads Leaf Collector when the leaves begin to fall, you can eliminate the dangerous leaf nuisance efficiently, economically, and quickly.

The two-man-operated Leaf Collector inhales leaves and in the process shreds them into small particles. These chopped leaves are known as "COMPOST," a natural fertilizer which will be begged for by many citizens, for use in their gardens.

This feature is important in cities where there is too great a distance to travel to the dumping site.





## FEATURES

**FLEXIBLE INTAKE HOSE** . . . . . easily maneuverable into driveways, under and around autos, in gutters, around corners and catch-basins and under cross-walks.

**RUGGED ROTOR BLOWER ASSEMBLY** . . . inhales and pulverizes wet or dry leaves in one operation.

**HYDRAULIC SYSTEM** . . . . . operates independently . . . makes hook-up and dumping almost instantaneous.

**SPACIOUS LITTER CARRIER** . . . . . holds blocks and blocks of pulverized leaves and debris.

**SPECIAL FILTERS** . . . . . keep surrounding air clean and dust-free.

The rubber tired snoot for all purpose leaf collecting (circular illustration) and the simple Hanger Arm unit (top) are standard equipment.

**CONTACT YOUR GOOD ROADS DEALER** or the factory for further detailed information or a demonstration.

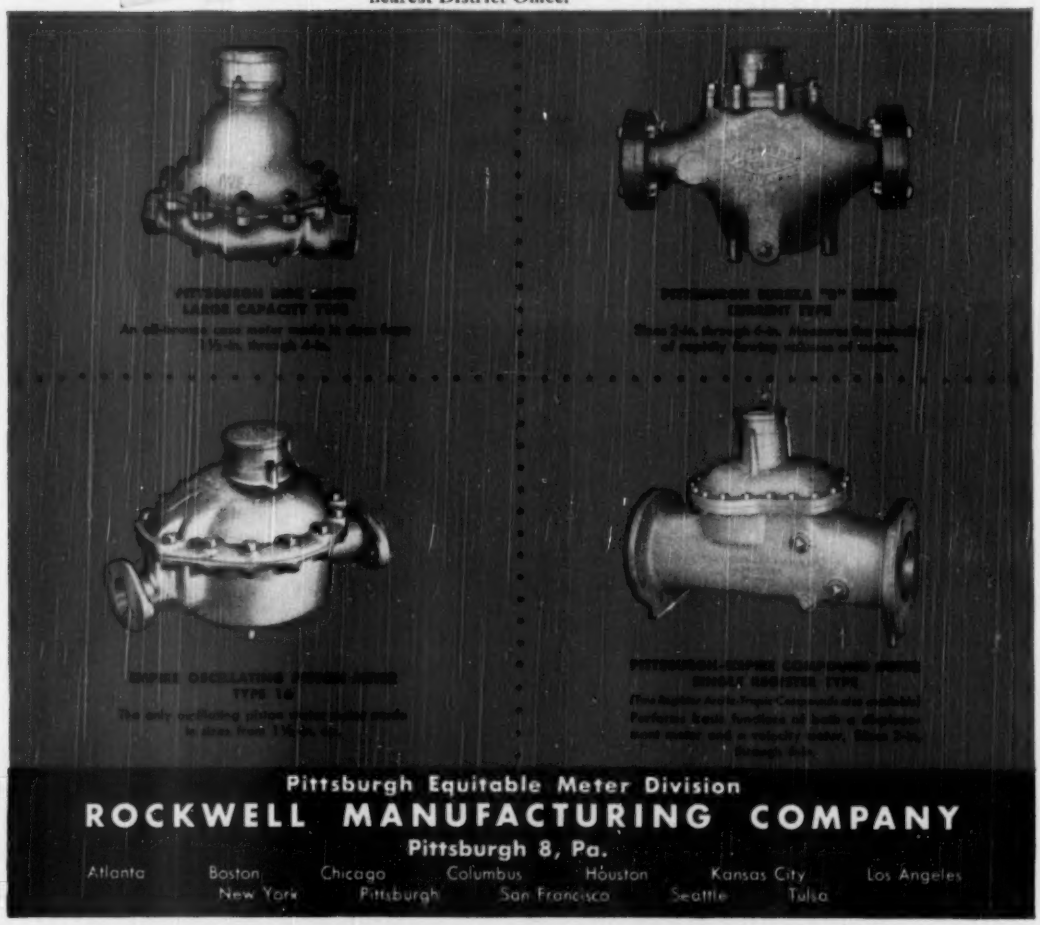
**GOOD ROADS MACHINERY CORP. MINERVA, OHIO**

# PITTSBURGH-EMPIRE

## large capacity meters

**RIGHT for the job—RIGHT on the job**

Commercial, industrial and apartment house services are potentially big revenue earners. To get all this revenue you need the right type of meter on every job. Fitting the proper meter to the setting is an important part of Pittsburgh-Empire service. We alone make all types of water meters, thus we can give you our recommendations without prejudice and in your best interests. To get all the facts on how to collect all your revenue, write the nearest District Office.



Pittsburgh Equitable Meter Division

**ROCKWELL MANUFACTURING COMPANY**

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New York Pittsburgh San Francisco Seattle Tulsa

# 120 NORDBERG

**provide reliable uninterrupted power**

## in the WORLD'S LARGEST INTERNAL COMBUSTION ENGINE PLANT

★ ★ ★ ★ ★ ★ ★

**NORDBERG *Gas Burning Radials***
**at Alcoa's Point Comfort Reduction Works**
**provide nearly 200,000 Horsepower**
***24 HOURS A DAY—365 DAYS A YEAR***
**to meet the full capacity demand**

**Important features of**
**NORDBERG *Radial* ENGINES**

- LOWER INVESTMENT COST
- LOWER INSTALLATION COST
- LOWER OPERATING COST
- LOWER MAINTENANCE COST
- LESS SPACE REQUIRED
- **AVAILABLE THREE WAYS . . . as oil burning Diesels, as natural gas engines, or as Duafuel engines.**

Applicable for industrial and municipal power plants and central stations or wherever compact, economical, dependable power is required. For full details covering Nordberg Radials, send for BULLETIN 172

# Radial ENGINES

In planning the Point Comfort (Texas) Reduction Works, Aluminum Company engineers were confronted with the tremendous task of providing sufficient electric generating capacity to produce over 100,000,000 pounds of aluminum per year. By specifying 120 Nordberg two-cycle Radial Engine Generating Units as the solution to this huge power problem, Alcoa took advantage of these important economy factors:

(1) *Reduced investment cost* . . . engine-generating unit cost . . . installation cost (building size is 50% of usual requirements).

(2) *Reduced operating cost* . . . fuel cost . . . maintenance cost.

(3) The experience offered by Nordberg as the producer of America's largest line of heavy duty internal combustion engines.

This tremendous installation exemplifies the way in which Nordberg Diesel Engines, in sizes from 10 to 9600 hp., are used to provide dependable, economical power for stationary and marine requirements all over the world.

**NORDBERG MFG. CO., Milwaukee, Wis.**

NORDBERG

DIESEL ENGINES

# There's Extra Performance in Every Attachment

**with ALL-WHEEL DRIVE ALL-WHEEL STEER**

Extra performance which increases profits by doing the work faster and better, and reducing investment in part-time equipment. All-Wheel Drive and All-Wheel Steer handle either a front- or rear-mounted attachment with no sacrifice of operating efficiency, where ordinary graders—handicapped by a dead front end and lack of rear steer—would be helpless through loss of traction or directional control.

AUSTIN-WESTERN COMPANY, AURORA, ILLINOIS, U.S.A.

BUILDERS OF ROAD MACHINERY SINCE 1880

Austin Western

# THE DEPENDABLE STRENGTH OF AMERICAN CONCRETE CYLINDER PIPE IS A RESULT OF SUPERIOR DESIGN

Manufactured in diameters 14" through 42" for pressures of 100 psi and greater.

Steel and concrete components of this outstanding composite design work together to give superior performance both in transport and structural properties.

1. Steel cylinder provides a positive water and air membrane as well as part of the required steel reinforcing area*. Thickness of the cylinder varies according to pipe diameter and general design requirements. Each cylinder is hydrostatically tested to a unit stress of not less than 22,000 psi.

2. Concrete cylinder, upon which lining is of proper mixture and dense compaction, its thickness adds rigidity and strength through "arching" effect (nominal minimum lining thickness is 5" for 14" and 15" diameters and 6" for larger diameters). Cylinder is lined prior to steel wrapping.

3. Steel reinforcing rods, which supplement the required steel area*, are wrapped under controlled tension, and accurate spacing around the concrete lined cylinder. The section modulus is thus increased while the concrete lining is placed under slight initial compression. The result is, in effect, a modified prestressed design.

4. Dense concrete jacket or coating (nominal minimum 1" thickness over the cylinder) is "packed" around the rod wrapping over the entire surface of the cylinder. This is an important structural feature.

*Total cross sectional steel area is based on 18,000 psi maximum allowable unit stress at the design operating pressure.

## RUGGED TEST SHOWS IMPRESSIVE RESULTS

Practical tests recently conducted for the Underwriters' Laboratories, Inc. prove the remarkable strength of American Concrete Cylinder Pipe under earth loads which far exceeded the average trench conditions. Several sections of pipe were installed under 10 ft. of earth cover. The ordinary method of pipe bedding was employed and backfilling was accomplished by flooding the trench. Machinists' calipers were then used to measure changes in inside diameters at several points along each section of pipe. The average results were as follows:

| | Vertical Diameters in inches | Horizontal Diameters in inches |
|---|---|---|
| 42" Diameter Pipe | Minus .314 | Plus .318 |
| 30" Diameter Pipe | Minus .052 | Plus .050 |
| 21" Diameter Pipe | Minus .010 | Plus .009 |

Subsequent examination of the concrete linings disclosed that they were sound and unimpaired under these extraordinary earth loads.

Superior design affords the most economical and effective use of steel and concrete to produce the best quality of pressure pipe at less cost to the purchaser. Economical first cost plus ease of installation, sustained capacity and trouble free service all help to reduce the cost of delivered water.

Complete information upon request.

Installing a section of 30" pipe prior to earth loading tests.

**American PIPE AND CONSTRUCTION CO.**

Concrete Pipe for Main Water Supply Lines, Storm and Sanitary Sewers, Subaqueous Pipe Lines

P.O. Box 3428, Terminal Annex, Los Angeles 54, California

Main Offices and Plant—4635 Firestone Blvd., South Gate, Calif.

District Sales Offices and Plants—
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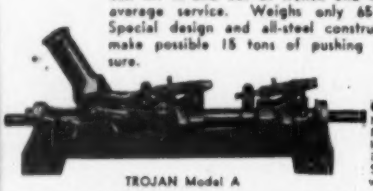
ERIE CEMETERY
A NON PROFIT ORGANIZATION
Incorporated JANUARY 27 1853
Modern ☆ Attractive ☆ Enduring
"Everything in Markers"
Lake Shore Markers
PERMANENT ALUMINUM SIGNS
VISIBLE DAY & NIGHT
Wire or Write Today for Complete Information
LOW COST NO MAINTENANCE
LAKE SHORE MARKERS
Div. of Lake Shore Pattern Works
654 W. 19th Street, Erie, Pa.

**The TROJAN pipe puller and pusher — Cuts Costs! Saves Time!**

**• Simplifies installation or renewing water and gas service lines under pavement**

MODEL A—for ½" to 1" pipe. One man can lift in and out of trench and install average service. Weighs only 65 lbs. Special design and all-steel construction make possible 15 tons of pushing pressure.

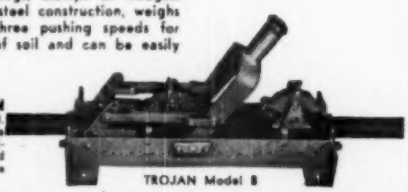


TROJAN Model A

**DOUBLE ACTION AND CONTINUOUS OPERATION**

No re-setting or grip required. Push pipe is made of double extra heavy steel pipe with inside couplings for butt joint. Pilots and Special Couplings will handle variety of jobs.

MODEL B—will push up to 2" pipe without additional dogs, clamps or wedges. Heavy duty, all-steel construction, weighs 140 lbs. Has three pushing speeds for different types of soil and can be easily reversed.



TROJAN Model B

**The TROJAN Manufacturing Co., 441 East Water St., Troy, Ohio**

41 GREENWAY—HAMDEN, CONN. BOX 465—MEMPHIS, TENN.

**Statler's Double Standard**

Statler has a double standard all its own!

It's simply that we try to make our rooms *twice* as comfortable . . . our food *twice* as tasty . . . our service *twice* as efficient!

And Statler folks try *twice* as hard to make you feel at home!

STATLER HOTELS: **NEW YORK** (FORMERLY HOTEL PENNSYLVANIA) **BOSTON** • **BUFFALO** • **CLEVELAND** **DETROIT** • **ST. LOUIS** • **WASHINGTON**

STATLER OPERATED: **HOTEL WILLIAM PENN** • **PITTSBURGH**

# 16" and UP

If your requirements call for transmission or distribution mains of 16" diameter or larger, Lock Joint Pipe Company can provide high quality concrete pressure pipe in all standard diameters and some intermediate sizes. Starting at a minimum of 16", Lock Joint Concrete Pressure Pipe is produced in 32 different diameters, and its four distinct types of structural design cover every working condition common to American water works practice.

Not only does Lock Joint Concrete Pressure Pipe qualify fully under A.W.W.A. specifications, but it alone embodies, in a conventionally designed pipe priced to meet competition, all the nine time-tested characteristics listed at right:

- **PERMANENT HIGH CARRYING CAPACITY**
- **PROOF AGAINST TUBERCULATION, CORROSION AND ELECTROLYTIC DAMAGE**
- **IMMUNITY TO RUPTURE OR BLOW-OUT**
- **SAFETY UNDER EXTREME EXTERNAL LOADS**
- **EVERY JOINT FLEXIBLE AND WATERTIGHT**
- **EASILY TAPPED**
- **SPECIALS TO MEET INDIVIDUAL SPECIFICATIONS**
- **USEFUL LIFE CONSERVATIVELY ESTIMATED AT 100 YEARS**
- **MINIMUM MAINTENANCE AND REPAIR COSTS**

*Whether your proposed line is large or small it will pay you to use Lock Joint Concrete Pressure Pipe, the pipe of proven durability, economy and dependability.*

*SCOPE OF SERVICES—Lock Joint Pipe Company specializes in the manufacture and installation of Reinforced Concrete Pressure Pipe for Water Supply and Distribution Mains in a wide range of diameters as well as Concrete Pipes of all types for Sanitary Sewers, Storm Drains, Culverts and Subaqueous Lines.*

**LOCK JOINT PIPE COMPANY**

*Est. 1905*

**P.O. Box 269, East Orange, N. J.**

PRESSURE PIPE PLANTS: Wharton, N. J., Turner, Kan., Detroit, Mich.

BRANCH OFFICES: Casper, Wyo. • Cheyenne, Wyo. • Denver, Col. Kansas City, Mo. • Valley Park, Mo. • Chicago, Ill. • Rock Island, Ill. Wichita, Kan. • Kenilworth, N. J. • Hartford, Conn. • Tucumcari, N. Mex. Oklahoma City, Okla. • Tulsa, Okla.

**LOCK JOINT**
*Reinforced Concrete*
**PRESSURE PIPE**

# Wilshire's new

MODEL NO. 1000

so easy to operate
a girl can run it.

**FOR COMPLETE INFORMATION,** prices and your dealer's name (no obligation) mail this to

**WILSHIRE POWER SWEEPER COMPANY**
**4615 ALGER ST., LOS ANGELES 39, CALIF.**

FIRM _____

STREET _____

CITY _____ STATE _____

YOUR NAME _____

YOUR POSITION _____

# "Super Sweeper"

**versatile**

A fast versatile sweeper picks up everything from fine dust to pop bottles with ease and efficiency.

**modern**

The Wilshire Super Sweeper is ten years ahead of its time. It's truly "something new under the sun."

## the greatest power sweeper ever made

**powerful**

Special roller guide prevents damage to machine while sweeping gutters. "Light Touch" foot pedal raises the sweeper easily to pick up large objects. New "Anti-Fatigue" adjustable seat is directly over the sweeping area. Ball bearings throughout. All standard replacement parts. The 48" Super Sweeper is powered by a heavy duty 8 h. p. gasoline engine.

**sanitary**

As it sweeps and vacuums, it takes that heretofore "ungettable dirt" from the tiniest rut or crevice. The "Wilshire Dust Control" prevents the common "cloud of dust" so annoying and injurious to both the operator and the public.

**economical**

One man can do much better what it would take five men to do using out-of-date methods. It actually pays for itself within a few months.

**durable**

Its single unit electrically welded steel plate body is built like a tank for the war on dirt.

DISTRIBUTORSHIPS AVAILABLE IN A FEW SELECTED TERRITORIES

**Wilshire**

POWER SWEEPER CO., 4615 ALGER ST., LOS ANGELES 39, CALIF

PHONE CHapman 5-3590

THE STREET SWEEPER FOR

# WAYNE

## can cut your street cleaning costs in HALF!

CENTRAL DUMPING

**CLEAN SWEEP.** Not only does the WAYNE 450 have the largest self-loading capacity of any motor pick-up sweeper, but it sweeps fast, sweeps clean and efficiently.

## *Loads over 3 cubic yards*

The *new* WAYNE Model 450 Pick-Up Street Sweeper can cut your sweeping costs in half because it makes possible time-saving, labor-saving, equipment-saving *central dumping*. It self-loads 84 cubic feet —*over 3 cubic yards*—of dirt debris. And it can transport that load at truck speeds.

Due to its hopper size and traveling speed, the new WAYNE 450 can perform the dual role of sweeper and pick-up truck. Does away with the added expense of truck and crew.

In smaller cities, the WAYNE 450 can take its load direct to the city dump. In larger cities, its hopper size and traveling speed enable the sweeper to go from its sweeping area to a *central dumping point*, rather than dump its load on the street.

In addition, the new WAYNE 450 gives you these added advantages: (1) Non-clogging elevator. (2) Two-speed, fast-loading conveyor. (3) 42" forward gutter broom. (4) Full front axle, designed to carry capacity loads at truck speeds. (5) 110 h.p. Ford automotive engine to provide utmost in operating flexibility. (6) Four-speed, heavy-duty transmission that provides 3 sweeping speeds and a traveling speed of 20 to 25 m.p.h. with full load. (7) Full-floating suspension of pick-up and gutter brooms. (8) Rear wheel steering. (9) Hydraulic controls. (10) Pressure water spray system.

**DUAL GUTTER BROOM SWEEPER.** WAYNE Model 2-450 is equipped with dual gutter brooms, dual steering, dual seats. Dual controls permit driver to operate machine from either side and to be always on the curb side he is sweeping. Model 2-450 is used to sweep one-way streets, divided highways, large paved areas and airports. Sweeping swath, 10 feet.

*Sold and serviced throughout the U.S. by a fine distributor organization*

WAYNE

PICK-UP

STREET SWEEPERS

**WAYNE MANUFACTURING COMPANY**

*Manufacturers of Street Sweepers, Industrial Sweepers, Light Delivery Vehicles and 2-Wheel Scooters*

1201 E. LEXINGTON STREET • POMONA, CALIFORNIA

*CLEANEST SWEEP OF ALL IS MADE WITH WAYNE SWEEPERS*

# A Dresser-coupled steel line delivers water cheaper...

The cheapest way to deliver water to the place where it turns into revenue is with a Dresser-Coupled steel line—the line that:

- **Cuts installation costs**
- **Cuts leakage losses**
- **Cuts maintenance costs**

When you're fighting a water shortage, you want pipe and joints that go in fast, deliver *all* the water you pump. You want to lay up to 2,000 or more feet of pipe per day with each small crew, use a minimum of expensive heavy equipment and have the assurance of foolproof, *tight* joints. Steel pipe, Dresser-Coupled, gives you these advantages.

Add the benefits of modern, glass-smooth linings; tough, shatterproof, long-lived steel pipe, and flexible Dresser Couplings which *absorb* underground stresses—you have made an investment in permanence which will save you many thousands of maintenance dollars in the years to come.

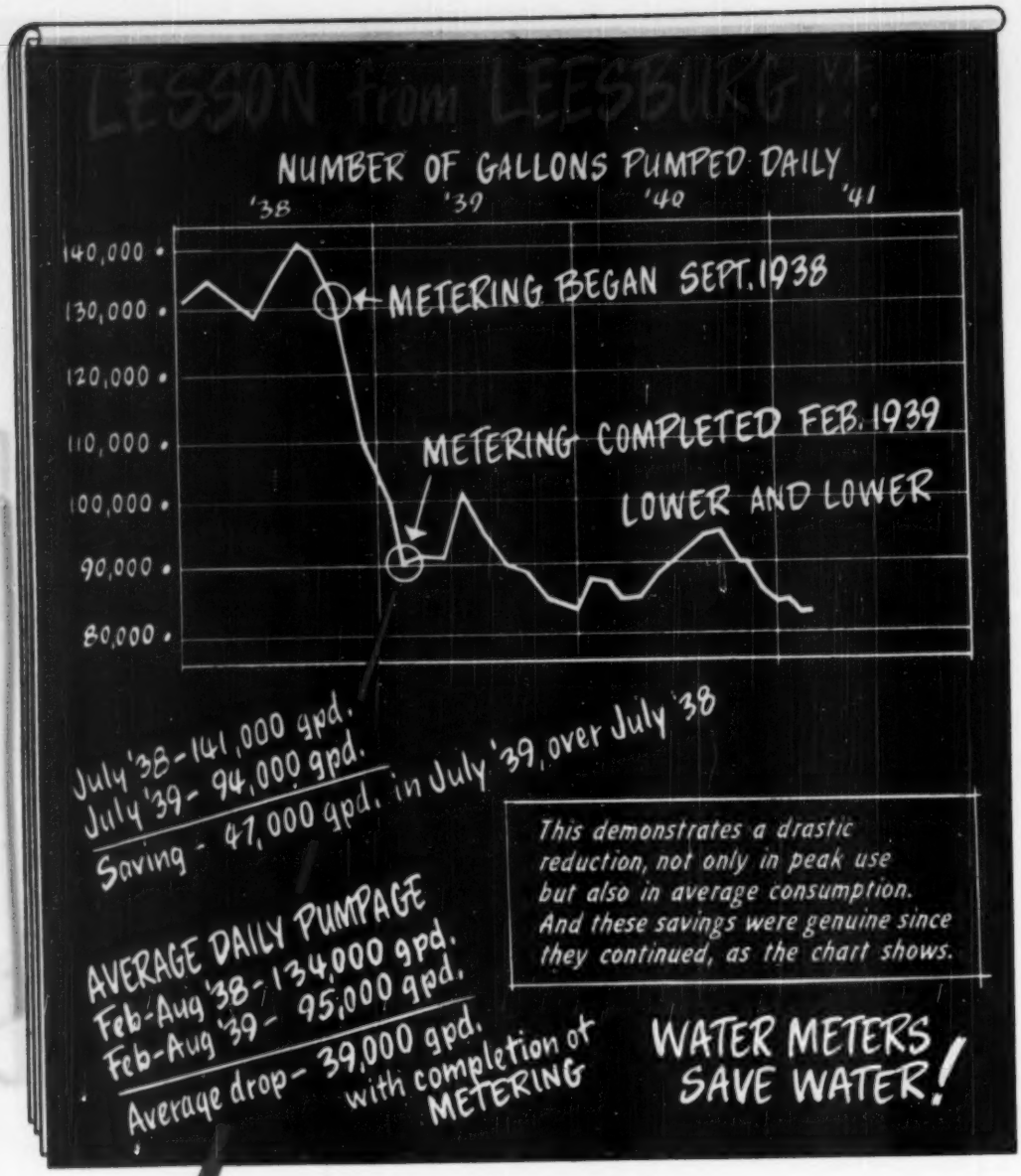
Ask your Dresser Sales Engineer or write today for literature.

*Near* **SAN DIEGO, Cal.,** this 16", six-mile branch of the San Diego Aqueduct was laid fast to help relieve a drought-caused water shortage.

*BE SURE* you get the best line at the best price. Put steel pipe and Dresser Couplings in your specifications.

**DRESSER** "FLEXIBLE-TIGHT" **COUPLINGS**

Dresser Manufacturing Division, 59 Fisher Avenue, Bradford, Pa. (One of the Dresser Industries). In Texas: 1121 Rothwell Street, Houston. In Canada: 629 Adelaide St., West, Toronto, Ontario. Sales Offices: New York, Chicago, Houston, Philadelphia, San Francisco.


LESSON from LEESBURG, VA.
NUMBER OF GALLONS PUMPED DAILY
'38
'39
'40
'41
140,000
130,000
120,000
110,000
100,000
90,000
80,000
METERING BEGAN SEPT. 1938
METERING COMPLETED FEB. 1939
LOWER AND LOWER
July '38 - 141,000 gpd.
July '39 - 94,000 gpd.
Saving - 47,000 gpd. in July '39 over July '38
AVERAGE DAILY PUMPAGE
Feb-Aug '38 - 134,000 gpd.
Feb-Aug '39 - 95,000 gpd.
Average drop - 39,000 gpd. with completion of METERING
This demonstrates a drastic reduction, not only in peak use but also in average consumption. And these savings were genuine since they continued, as the chart shows.
WATER METERS SAVE WATER!

**METERING ALONE IS NOT ENOUGH . . .**

*"It must not be taken for granted," writes a prominent Water Works General Superintendent and Chief Engineer, "that with the installation of meters all troubles come to an end. Meters must be properly maintained . . . Many a water company has become careless in meter maintenance, and as meter efficiency decreased, has looked to increased rates . . . A properly maintained meter department is the most important part of any water system."* Trident Meters, simple, and rugged with 100% interchangeability of parts, are easy and economical to maintain, at "new meter accuracy" through years of constant service.

**NEPTUNE METER COMPANY • 50 West 50th Street • NEW YORK 20, N. Y.**

Branch Offices in Chicago, San Francisco, Los Angeles, Portland, Ore., Denver, Dallas, Kansas City, Louisville, Atlanta, Boston.

NEPTUNE METERS, LTD., Long Branch, Ont., Canada

216

# The City's Role in CIVIL DEFENSE

CIVIL DEFENSE must evidently take its place today among the essential activities of our national, state, and local governmental units. Apparently this must continue as long as any great nation aggressively repudiates its obligations as a member of the United Nations. Preparedness on the home front may prove an exceedingly valuable deterrent to a nation planning aggressive war. The question, then, is not *whether* civil defense measures shall be taken now, but *what* these measures shall be.

There are two parts to this question with which public officials must be concerned today:

1. What are the immediate steps?
2. What long-range changes shall we make to adjust ourselves to future contingencies?

Let us look at the more immediate problems. The situation in Korea makes us keenly aware that surprise attack is the modern method of aggression. If not localized, such conflagration may spread. To prevent panic on the home front the public must know that sound coordinated plans have been made for its protection in an emergency where atomic bombs or other new weapons might be used.

First, and most important, we have every right to reject the thought that counter-measures are impossible against an enemy attack by atomic weapons or hitherto unused methods of devastation. Mental surrender is quite incompatible with American practices. Our country, from its inception, was based on the principle that we did things that others considered impossible. We must not allow a defeatist attitude to conquer our thinking.

However, pending the development of such protection, we should analyze what we should do were an American city subjected to attack by this weapon or other known means of military destruction.

We can base our planning on the theory that we shall not expect the American people to abandon their homes and live permanently in caves or underground retreats. If the human race cannot survive above the surface of the earth, permanent burial may be the fate we really merit.

We need, therefore, an organization able to cope with any large disaster on an area basis. Of utmost importance are leaders in these areas who will have the power to act and who will have a plan of action.

The plan of action should embody a mutual-aid system on a larger scale than was established in the last war. Fire, police, repair crews, repair equipment, should be inventoried so that they can be called into an afflicted area as needed.

Reliable centers of information should by all means be established. In other disasters, much confusion and grief have sometimes resulted because of conflicting reports issued by the local radio and press, which did not have access to accurate data. Orderly control over disasters requires orderly information. Careful study should be given to such vital facilities as police switchboards and radio facilities. Are they adequately designed and protected? Have plans been made for communication by "ham" radio operators or other means in the event of power shortage? Are "stand-by" units available for the operation of key centers and services?

Needed also is a large-scale plan of evacuating badly damaged areas if necessary. Present military studies should disclose how extensive these plans need to be. A panicked civilian population can do great damage to itself and to military programs.

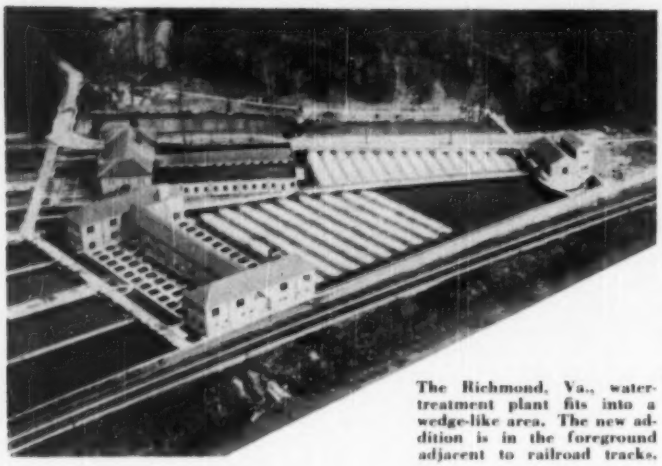
The wise official will not fail to confer with his local chapter of the American Red Cross—the organization which, more than any other, is already equipped with trained volunteers, carefully made plans, and extensive experience in disaster preparedness and relief. Failure of municipal officials to understand the Red Cross program and its facilities and limitations has produced confusion and lessened the effectiveness of immediate and long-time assistance in many local disasters. An agreement on the areas of activity and responsibility arranged ahead of time will prove of great value.

Further advice and information on civil-defense planning will be forthcoming from the National Security Resources Board. But the immediate and long-range responsibilities for action on civil defense will undoubtedly remain on local shoulders.

Such measures as suggested above, well thought out, need not be relegated to military use only. They will be valuable to our country whenever any disaster strikes. To get a fair sense of proportion, let us remember that a hurricane, or an explosion, or a flood may do as much property damage over a limited area as an atomic bomb. Scarcely a year passes when some city does not face such an emergency.

From a long-range standpoint, we should be ready to accept further decentralization—of key industries, hospitals and other vital installations. We should have a program of analysis so that vital utilities such as gas, electricity, water, communications, will not be dependent on a single central source and thereby be crippled easily. These are steps that our country should take in its normal development. They would build us into a stronger nation either for war or peace.

In short, the present emergency, and its accompanying civilian defense activities, can become a strengthening asset to our country rather than a crippling handicap. Let us bend all efforts to see that this takes place.



The Richmond, Va., water-treatment plant fits into a wedge-like area. The new addition is in the foreground adjacent to railroad tracks.

# Two Centuries of Progress

## Richmond, Va., dedicates its new water-treatment plant, notes progress through the city's 200 years

H. E. LORDLEY
*Assistant Director*
*Department of Public Utilities*
*Richmond, Va.*

THE first public water supply of any consequence in the City of Richmond began operation well over two centuries ago and tapped the numerous springs in near-by hills, using wooden pipes to bring the water to the homes. From that rude beginning the science of water treatment and sanitation has advanced in our city to the point where we are able to use the most thorough of treatment methods to furnish a water that has received the praise of technical men throughout the nation.

Water supply advanced from wood to iron pipe in 1829, when the Virginia General Assembly passed an act authorizing the city to use the pipe along certain streets and under certain conditions. A year later the city entertained a petition from the citizens that estimates be obtained for acquiring an "abundant supply of sweet and pure water for all purposes."

This was a big order. But there has been no simple method of outlining the policy of our department throughout the ensuing years.

Of course, as any sanitary engineer knows, often we face the difficulty of knowing just what a "sweet and pure" water is. Those early water purveyors first pumped the muddy water directly from the James River without treatment, and for the next 40 years the people indignantly complained that this water was neither sweet nor pure, nor was it abundantly supplied. In 1876-83 new reservoirs and pumping stations were erected, but still the public voiced its criticism. During the first decade of 1900, the householder developed many home water-treatment gadgets. For example, many used a glass bowl which was attached to the spigot. This would fill, and after standing, the river mud would settle and the clear water would be drawn off. Servants spent much time swishing bags of alum in tubs of water, the forerunner of the now universal alum-coagulation treatment.

Alum was adopted for the treatment of water in 1909. In this year, the city constructed two long settling basins, still in use at the present plant, that received river water. Large concrete coagulation basins were constructed below the long settling basins and in these waters the alum was administered. This, of course, made a remarkable improvement in its clarity but did not kill the dangerous bacteria. Typhoid took a heavy toll in Richmond in the early 1900's.

But the typhoid death rate took a setback in 1914, when the art of chlorination was introduced. The old chlorine-treatment house still stands on the river bank below the new plant. By 1924 the city had a complete treatment plant in operation, which fullfilled two of the original three aims outlined a century earlier. The water was "abundant" and "pure" but it was not always sweet. In fact, the pollution in the river often made it smell distressingly bad. The 1924 plant still operates and has a nominal rating of 30 mgd and has delivered peaks of 40 mgd. However, as Chief Engineer Marsden C. Smith has said, "it takes the maximum efficiency of human efforts and the unstinted generosity of a kind providence to obtain this quantity."

Subsequent improvements to the 1924 plant allowed it to reach the third water-supply goal but lose ground on the first. Through developments in the use of superchlorination, activated carbon, and other treatment methods we were able to remove the disagreeable taste from the water. But because of Richmond's growth, the plant capacity was no longer adequate. Thus we could say that the water was "sweet and pure" but no longer "abundant."

So in the spring of 1948 we remedied this shortcoming with a $2,000,000 addition, and dedicated it last March 15. This plant has been designed and constructed to utilize the most modern and efficient treatment processes in the United States. It is designed to receive the difficult James River water, treat it, and produce a clear, consistent, finished water that meets thoroughly those three requirements of "abundant supply, sweet and pure."

### Remodeling Details

The new plant is rated at 36 mgd and has a maximum peak capacity of 48 mgd. The old and new plants together can supply 66 mgd of purified water if needed.

As mentioned previously, the plant still uses the 1909 settling basins. These are 10 feet deep, 300 feet wide, and about a mile long. The basins together hold about 170 mg of water, which generally remains there for 24 hours. During this period about 20% of the suspended solids drop out without the aid of chemicals. A small amount of copper sulphate is added in the summer to control algae growths. When the river is high and carries a great amount of mud and slime, we close the intake gates and use settling-basin water only. During normal river flows, the water proceeds from the river through the settling basins by gravity. At low flows, two large De-Laval pumps

take the water from the settling basins to the plant.

The first step in the treatment is the mixing chambers. At this point two Omega batch-type dry-chemical feeders administer alum during the summer or iron sulphate in the winter when the cold water is more difficult to treat. The chemicals are mixed as the water flows through around-end baffles. The coagulant addition amounts to 250 pounds per million gallons. We also provide superchlorination treatment at this point, using Wallace and Tiernan feeders to administer chlorine at the rate of 25 pounds per million gallons.

The water then leaves the mixing chamber and flows into the coagulation basins by gravity. Here the coagulation is encouraged by paddle-wheel flocculators, originally designed by Chief Engineer Smith, and now currently adopted as standard practice in water plants throughout the world. The water then drops its load of coagulant-collected solids, depositing it in the settling basins, and then proceeds to the filters.

Before it reaches the filters, however, we dechlorinate it with sulphur dioxide, and thereby bring the chlorine residual to a level that is not noticeable to the public. The water receives a dosage of activated carbon applied by two Rotolock Volumetric Omega feeders to remove directly any remaining tastes and odors that the superchlorination treatment has not burned out. Carbon is fed at the rate of 5 pounds per million gallons of water. The filters themselves act as a protective strainer rather than a remover of bacteria. By the time the water has reached the filters the strong superchlorination treatment has killed all the biological life.

The filters with Builders Iron Foundry venturi meters, rate controllers, gauges, and operating panels provide a final polishing effect to the water, acting as a "super-strainer." We like to maintain a high filter rate by fairly frequent cleaning. Our backwashing schedule calls for a filter wash every 100 hours.

## Final Treatment

Following filtration, the water receives a long-lasting residual of chlorine and ammonia administered by Wallace and Tiernan feeders at the rate of 10 pounds per million gallons of the former to 3 pounds of the latter. We also add 2 pounds per million gallons of copper sulphate in order to inhibit algae growth in the reservoir and the distribution system. The water proceeds to an aerator basin, where a set of three DeLaval aerator pumps provide a release for part of the carbon dioxide. The pumps are rated at 15,000 gpm against a total head of 31 feet.

The water then flows through a Builders-Providence Venturimeter into a well underneath the limehouse, where four batch-type Omega feeders apply lime at the rate of 40 pounds per million gallons. This stabilizes the water by nullifying the corrosive action of any remaining carbon dioxide. The water then goes to a storage reservoir at Byrd Park for final distribution.

The AWWA Specification, 300-pound test, manual and hydraulic cylinder-operated gate valves produced by the A. P. Smith Company were used throughout this plant. The wash-water valves were of the throttle-track type. All other hydraulic valves were of the square bottom case-and-disc type.

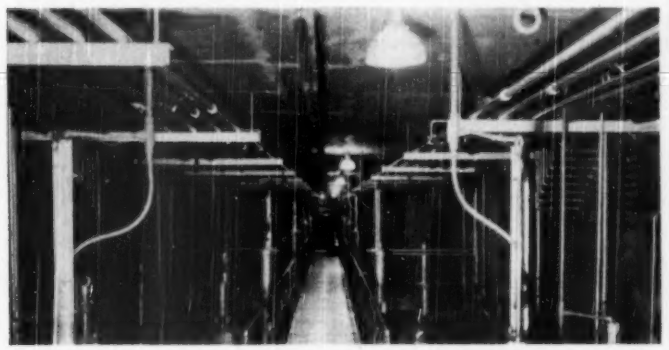
Alum, iron salts, and lime are all delivered in bulk to the plant and are unloaded by three Dracco Corporation pneumatic conveyors.

Coagulation tests are taken by the chemist once or twice a day to determine the amount of iron sulphate to be used in winter or aluminum sulphate to be used in summer. It has been our experience that the iron salts work best in the colder water.

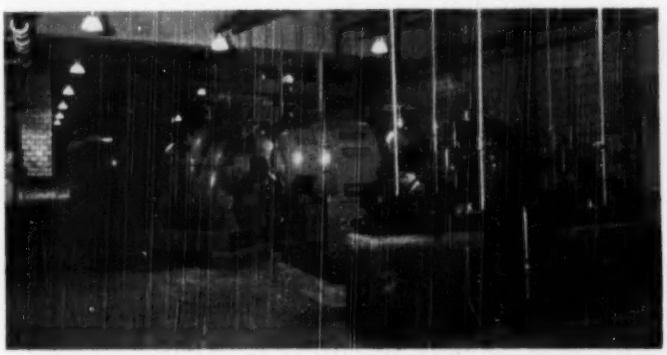
Samples of 500 cc are placed in six beakers. Dosage varies from 150 to 400 pounds per million gallons. Determinations are made from the six samples after being stirred for 10 minutes by a Phipps and Bird water-analysis mixer.

Routine tests are run daily at nine places from the James River to the reservoir outlet. For alkalinity and carbon dioxide, an electric titrimeter of Fisher Scientific Co., Pittsburgh, is used. For pH, an electric meter of the Beckman type is employed. For examination for microscopic animals and plants, we use a Bausch and Lomb portable microscope. Other tests cover color, turbidity, oxygen consumed, copper, ferric or aluminum oxide. The chemist uses an Aperometric titrator to indicate the amount of chlorine present. Bacteriological tests are made daily on these nine samples.

The design, plans, and specifications for the new improvement were prepared by Whitman, Requardt and Associates, consulting engineers, Baltimore, in consultation with Chief Water Engineer Smith and the writer.



**Plenty of head room in the pipe gallery was a requirement in the new plant.**



**These big pumps take the raw water from the settling basin to the filter plant.**

# "STRAIGHT EIGHT" SEWAGE TREATMENT

By HARRY N. JENKS
*Consulting Sanitary Engineer*
*Palo Alto, Calif.*

**Castroville, California, builds an eight-stage treatment plant along a single longitudinal axis**

ECONOMY of construction and exceptional simplicity of operation characterize the new sewage-treatment plant that was placed in service during the early summer of 1949 by the Castroville Sanitation District, Monterey County, California. Streamlined in appearance, the plant is built along a single longitudinal axis, each stage of pumping and treatment following in orderly succession. The "straight eight" stages of treatment are as follows:

1. Pumping
2. Primary clarification
3. Biofiltration
4. Aeration
5. Final clarification
6. Chlorination
7. Sludge digestion
8. Sludge drying

The treatment plant is designed for the clarification and biologic oxidation of 300,000 gallons per day of domestic sewage from a tributary design population of 3,000 within the district. The plant is located at the edge of an artichoke field some 1,500 feet from the westerly boundary of the district. The value of the land in this "artichoke center of the world" is such that it was desirable to restrict the plant site to a small strip, contained in the paved area surrounding the plant. Hence the fundamental reason for the "straight-eight" layout of the plant structures. This grouping of the plant units in accordance with the sequence of treatment not only saved the cost of land, but afforded a still further saving in cost of interconnecting pipework; and, last but not least, resulted in an unusually pleasing appearance of the plant as a whole.

In the foreground is the pumping plant, the super-structure of which houses the electric switchboard and chlorination facilities, together with space for the operator's desk and small tools.

Next to the pumping plant is the primary clarifier, followed by the primary biofilter in circuit therewith, the recirculation pumping unit being observable immediately beyond and to the right of the filter bed.

The effluent from the single-stage biofiltration system enters a spirovortex aeration system, comprising two circular tanks in which mixing action is induced by means of a recirculation pump, the discharge from which is thoroughly aerated over a riffled deck located between the tanks. This novel design was in part the outcome of prior studies made in connection with the writer's experimental research plant at the Alto Sewage Treatment Works. This pilot plant also served to demonstrate the feasibility and efficiency of rapid biologic filtration coupled with activated-sludge treatment in the secondary stage.

The activated sludge developed in the aerator is settled in the final clarifier following the aeration period. From this clarifier the plant effluent is discharged over a measuring weir into the plant outlet line to Tembladera Slough for final disposal in this drainage channel. The outlet line provides the desired contact time for the chlorine applied to the effluent.

The degree of treatment is so complete that the effluent is used to supply water for the chlorination, as well as for wash-up purposes and for irrigation of the plant grounds. In this connection, a small pressure system is installed at the effluent box of the final clarifier.

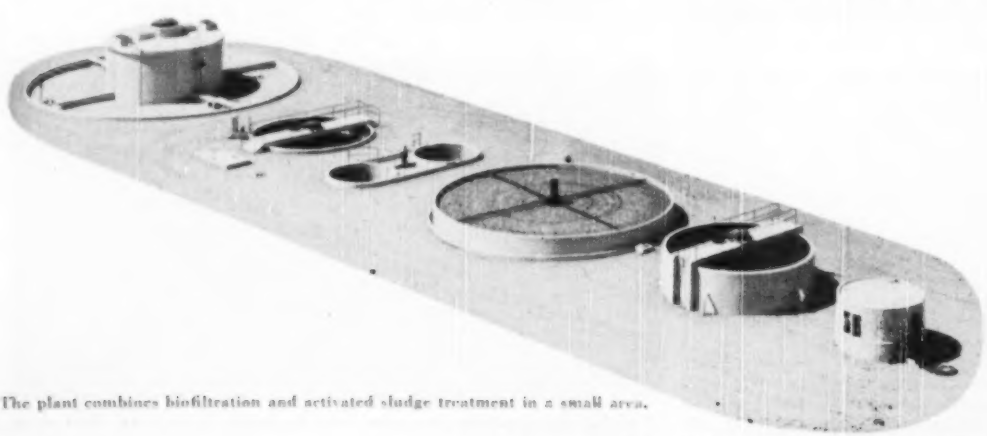
Sludge and scum removed from the primary clarifier, together with waste activated sludge from the final clarifier, are pumped to the sludge digestion tank. The sludge drying area, concentric with this tank, is divided into four beds by radial concrete partitions, the whole area being enclosed by a low circular wall.

## Engineering Design Features

The pumping plant is a circular structure of 14 feet inside diameter, with a pump sump receiving the incoming sewage and a dry pit containing the raw sewage pumps. These are Chicago Pump Company duplex "Flush-Kleen" vertical, close-coupled units, each having a capacity of 300 gpm.

The primary and final clarifiers are each 28 feet in diameter and 7 feet in side-wall depth. They are provided with Dorr Company bridge-type sludge-removal mechanisms, the primary tank including also an automatic scum skimmer.

Equipped with a Dorreo rotary sewage distributor, the biofilter is 50 feet in diameter, with a rock bed depth of



The plant combines biofiltration and activated sludge treatment in a small area.

3 feet. The rock size is 1½ to 2½ inches. The underdrain system comprises a 2-by-4-inch redwood grillage resting on concrete sleepers traversing the filter floor, at 3-foot centers. Natural ventilation of the underside of the filter bed is secured through 2-by-12-inch slots extending through the biofilter enclosing wall between successive sleepers.

The recirculation pump, by which the biofilter effluent is returned to the influent line of the primary clarifier, is a Fairbanks, Morse & Company, vertical suspended-column unit, having a capacity of 450 gpm against a 10-foot head, and driven by a 2-hp motor.

The biofilter effluent, in amounts corresponding to the sewage flow, reaches the final clarifier after treatment in a spirovortex aeration system comprising a pair of mixing tanks 14½ feet in diameter by 9 feet in depth. These hold the flow for a period of two hours at design capacity while being aerated, in the presence of activated sludge returned from the final clarifier, by repeated passages over the riffled deck between the tanks. The combined aeration and mixing are maintained by means of a Fairbanks, Morse & Company axial-flow, propeller-type pump driven by a 1½-hp motor and discharging 1,500 gpm against a 2½-foot head.

Sludge and scum pumping to the digester is accomplished by a Chicago Pump Company "Scru-Peller" unit provided with motorized variable-speed drive. This unit also serves as an activated-sludge return pump.

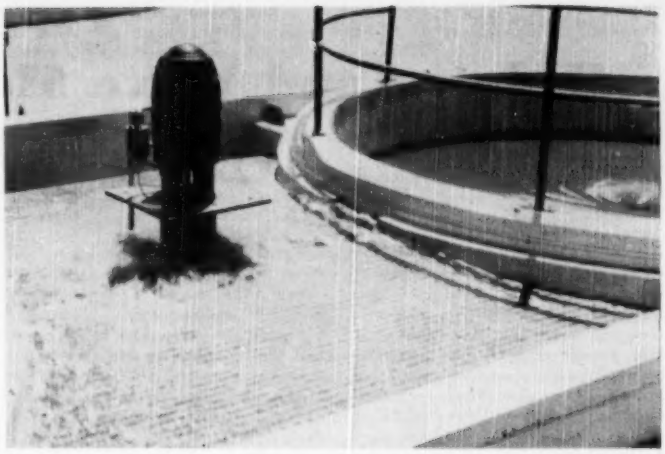
The sludge-digestion tank is 28 feet in diameter by 20 feet deep, furnished with equipment for collecting and burning sludge gas. The tank is large enough to function satisfactorily without heat. As already noted, the sludge-drying beds are concentric with the digester and within a circle 69 feet in diameter.

Chlorination equipment includes a Wallace & Tiernan vacuum solution feed chlorinator, having a capacity range of 0 to 100 pounds per 24 hours.

### Building and Operating Costs

The Castroville Sanitation District Sewage Treatment Plant was designed by the writer for the Monterey County Engineering Department, of which Howard F. Cozzens is County Engineer. The administrative authority of the District is the Monterey County Board of Supervisors, of which A. B. Jacobsen is Chairman.

The plant was constructed by the Charles MacClosky Company, General Contractors, San Francisco, at a cost of $112,000. The net cost of the treatment plant, exclusive of the pumping plant, was $90,000, or $30 per capita on the basis of the design population of 3,000.



**The spirovex aerator is operated by a single propeller-type pump over a riffled deck and induces vortex mixing in the adjacent primary and secondary holding tanks.**

Operation of the plant is under the direction of the County Engineer and involves part-time supervision by one man, who attends the plant each day for a period of from one to two hours.

It is of interest to note that, apart from the customary motorized drives for the clarifiers and for sludge pumping, the total power requirements for biologic oxidation involve but one 2-hp motor for biofilter recirculation in the primary stage, and one 1½-hp motor for activated sludge aeration in the secondary stage of the process.

Thus complete treatment of the sewage is attained with a power input of 3½ hp. The resulting unit power requirement is 1.17 hp per 1,000 population, or somewhat less than 12 hp per mg on the basis of the design flow of 300,000 gpd.

## *West Orange Rejects $43,000,000 Apartment Project*

BY UNANIMOUS action on June 26, the Board of Commissioners and the Planning Board of the Town of West Orange, N. J., rejected a rezoning proposal for the erection on the 197-acre site of the West Orange Public Golf Course of a 5,300-family garden-apartment project.

In a joint statement by the two bodies, the opinion was expressed that acceptance of the project would effect a substantial reduction in the town's tax rate, but that nevertheless, "by reason of the implications inherent in terms of change in living conditions of the people and of the future development of the town," approval did not seem to be justified.

It is estimated that the proposed development would add about 12,000 persons in this relatively small area to West Orange's present population of 28,000, and "both the Board of Commissioners and the Planning Board consider that such a state of affairs would be undesirable and would be the source of many problems of absorption.

Another consideration which has a strong bearing upon the present view of the two boards (says the joint statement) is the effect the project would have upon planning of the future development of the town.

One of the purposes of such planning would be to promote the orderly development of virgin ground. Both boards feel very strongly that the allocation of so large a territory as is here involved to any project which is of the magnitude of that in question might and probably would constitute a serious handicap to any one who undertook to plan the development of the town on a long-range basis.

The statement also pointed out that, if additional reason to support the views of the two boards is sought, it may be found in the attitude of the people.

From the moment that the proposal first came to the attention of the public, opposition to it arose. This opposition has steadily mounted and comes not only from people living in nearby areas but has been expressed by many persons in various parts of the town who would not be directly affected.

These individual expressions of disapproval have been supplemented by similar expressions of a number of organized groups. While some favorable comment has been offered, it is evident that the great preponderance of our people are unalterably in opposition. . . .

For the reasons herein expressed both the Board of Commissioners and Planning Board at this time record themselves as being in opposition to the proposal.

HEADACHES IN . . .

# Hydrant and Valve Maintenance

## . . . AND HOW TO CURE THEM

IF YOU were to ask the valves and hydrants on your water distribution system what prevents them from doing their jobs well at all times, and were they able to tell you, they would probably classify their troubles into three main categories: corrosion; thoughtless actions by street-maintenance crews; and outright damage by the public. If you were to ask what would be required to check and prevent this sort of difficulty, they would undoubtedly answer, "a more serious, well organized inspection program."

These points, in essence, were explained by H. W. Niemeyer, Superintendent of Distribution, Indianapolis Water Company, before a recent meeting of the Indiana Section of the American Water Works Association held in LaFayette.

### Corrosion Difficulties

Corrosion, Mr. Niemeyer emphasized, is the most serious problem, resulting from the use of dissimilar metals in the valves and hydrants. Cast iron and bronze separately have a fine record of endurance, but together they form a galvanic cell that produces corrosion. In time, this weakens the metal and may produce failure. Valves not operated over a long period of years may fail to function. Hydrants are not subject to corrosion to such a great extent unless the groundwater is high enough to submerge their lower operation parts.

Stuffing-box glands of valves and hydrants are another source of difficulty. Corrosion also takes place at this point and fills clearance spaces about the stem with deposits. This increases the torque needed to operate the valve or hydrant. Periodic operation will work the deposit out and keep the stems moving freely.

This periodic operation will, however, cause a disturbance in the packing material. If the packing has lost its resiliency, the gland will start leaking. This is no great problem in hydrants, since they can readily be repacked. It is not a great problem in valves until they leak continuously. The most satisfactory packing will be one that is non-corrosive, has permanent lubricating qualities, will not dry out, and will seal with a minimum clamping pressure.

According to Mr. Niemeyer, valves and hydrants suffer every time a street-maintenance crew or a paving contractor goes to work. Valve boxes are objects that may be destroyed or buried. Fire hydrants are merely used for bumping blocks for bulldozers.

To prevent such action, rigid inspection of all known street-improvement jobs is required to see that all valve boxes and vaults are in position and to final grade. It is also good practice to install new packing in the valves and to perform any other needed maintenance before a new pavement surface is put in place. If added valving is needed in the area of the street improvement, it can be installed as can the maintenance of existing valves without the high cost of pavement repair.

Street-resurfacing projects must be watched carefully, Mr. Niemeyer emphasized. Asphalt patching crews can be depended on to cover any valve box with bituminous material. Road graders on unimproved streets will break or tear up valve boxes without reporting such damage to the utility.

### Home-Owner Trouble

Home owners often cause hydrant trouble also, by extending a terrace or otherwise changing the grade at the property line. In one case the hydrant nozzle was so low that it interfered with the connection of a fire hose. In another case it caused the hydrant to be left so high that the frost could penetrate the base. Owners have built fencing so close to a hydrant that it prevented the operating wrench from spinning.

Traffic also causes problems. Valve boxes in an unstable road bed may be shifted by traffic loading so that the operating key cannot be engaged with the valve key nut. Boxes may be tilted so that a protruding edge becomes a

**Valve maintenance and inspection requires operation of the valve through its entire cycle. This truck-mounted Payne-Dean valve operator, used by the Indianapolis Water Company, facilitates the work of testing.**

hazard. Vaults may become weakened.

Hydrants also are often traffic casualties, frequently knocked out of alignment and unreported. The break-off type of hydrant, Mr. Niemeyer felt, has many advantages and merits careful consideration. Much damage can result to valves and hydrants also, he felt, through their use by inexperienced or unauthorized people. Valves may be left closed or partially closed. Hydrants may be damaged or left partly open. Hydrant caps may be left loose or not replaced at all. Failure to replace the nozzle caps is an invitation to trouble from the younger generation. In one instance a hydrant was found filled to the nozzle with rocks.

All these difficulties, Mr. Niemeyer stated, emphasize the need for periodic inspections, preferably on an annual basis. Hydrant testing should be conducted during the fall months, since most faults develop during the spring and summer. This puts the hydrants in condition for winter service. He expressed no seasonal preference for valve testing. Complete maps and records are essential, as well as a permanent test-report card for each valve and hydrant. The test-report card should carry under its heading a complete description of all physical data such as make, size, type, location, measurements from reference points, date of installation, indentification number, and a test route number. The valve-test card should carry, in addition, the type of setting, box, or vault; the number of closing turns; and the direction of turning if mixed-directional valves are in the system.

The hydrant work should also include lubrication of the operating nut, tightening or replacement of the stuffing gland packing as needed, greasing of nozzle-cap threads, and caulking of loose nozzles. With only a little more time required the inspectors can detect leaks with a mechanical or electronic hearing aid. Some utilities take a pito measurement of each hydrant's delivery rate. Others have the testing crew flush all hydrant leads and do some dead-end flushing. A crew of three men can test about 120 hydrants in an 8-hour day. With leak and pressure survey added, this number would be reduced to 100.

### Power for Testing Valves

Mr. Niemeyer felt that valve testing requires power-operating equipment. This would be through the use either of a compressor-driven air motor of low speed or the truck-mounted valve operator powered by the truck engine. The valve-testing truck in Indianapolis has been equipped with a mobile phone and the testing crew makes emergency and routine main shut-outs.

# Imaginative City Planning in Mexico

By BLEECKER MARQUETTE, *Executive Secretary*
*Cincinnati Better Housing League*
*Cincinnati, Ohio*

ONE wouldn't expect to find in Mexico City and in Acapulco some of the finest and boldest examples of modern architecture, but that is one of the pleasant surprises in a visit to the land of "poco tiempo."

They are doing some real things in planning too. Two examples are outstanding. The University of Mexico presently is scattered throughout the city. It lacks a campus, it lacks unity, it lacks an opportunity for student life. Carlos Contreras, known to many American planners and "housers" as one of the leading Mexican planners, convinced the president of the University of Mexico and other authorities involved that it would be the part of wisdom to launch out boldly and buy a great tract of 1,750 acres in the lava fields of El Pedregal, about one-half hour from the center of the city, and to build there a completely new University of Mexico.

The land has been bought, although not the entire 1,750 acres. A sign conspicuously posted on the site reads "Universidad National de Mexico." Construction is expected to begin in the near future. Not only will this site contain all the University buildings, but it will accommodate a complete community with homes for the members of the faculty, dormitories for the students, a commercial center, and all essential recreational facilities, including a movie. Here was a bold proposal that caught hold.

### Intriguing Subdivision Layout

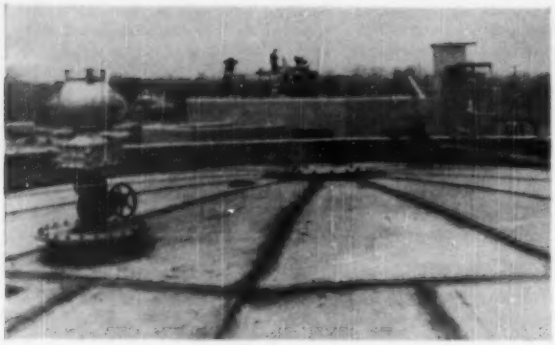
Interestingly enough, it is in this same El Pedregal section that we find a most intriguing new subdivision layout. This, too, was born of the fertile imagination of Carlos Contreras, though others have taken up the idea and are doing the promoting. These great lava fields with their vast areas of dark, forbidding lava rock, would scarcely suggest to most of us the possibility of attractive residential development—but Mr. Contreras thought differently. It was his idea to use the natural contour of the land, with all of its ravines, hills, and even tunnels, to form charming gardens and lawns and flowerbeds—and even an occasional pool. In some instances the flat lava-rock formations could quite readily form the floor of the living room and if so, that is to be done.

There is now in process here the development of an amazing new residential section known as "Jardines del Pedregal de Sn. Angel"! In keeping with the style of the more pretentious Mexican homes, each lot here has its own security wall. As one approaches the subdivision, one sees a series of stone walls dividing up the lots. They are not just ordinary stone walls, but are made of the indigenous lava rock. In their natural state these walls look dull and uninviting, and one's first impression is disappointing. This effect is completely reversed, however, in the demonstration lot, where the walls have been tinted green—not just any green, but a shade that matches precisely the green trunks of an indigenous tree that grows in the lava beds.

### Breathtaking Effects

It is only when one sees this sample homesite, fully landscaped, that one gets the breathtaking effect and fully realizes what imagination it took to foresee these possibilities. To be sure, every inch of soil for the lawns and for the flower beds and all of the tanbark that covers the walks has to be trucked in, and the expense is not minor. Yet, according to the promoters of the project, the cost of a lot, of landscaping, and of building a two-bedroom house in the new subdivision will not be excessive. They figure it at about $12,000 in our money. Of course, that's a lot more expensive there than it would be here, but even so, considering what the owner gets, it seems a good "buy."

The most striking thing of all is the resulting color scheme — the intense black of the lava, the brilliant green of the grass, and the brown-red of the tanbark walks. One has the feeling that he would like to go back to "have a look" when this intriguing new community has been built up.



Work proceeds on the main building. This photograph was taken from the secondary digestion tank of the sewage-treatment plant.

# Mount Clemens

## New plant protects beaches and recreational area near the city

By T. B. HENRY
*Jones, Henry & Schoonmaker*
*Consulting Engineers*
*Toledo, Ohio*

MOUNT CLEMENS, Mich., famous as a mineral-bath health center, is completing a sewage-treatment plant that will put this phase of civic and community activity on as excellent a scale as the rest of the health and recreation facilities in this vacation city.

Mount Clemens is a center of light manufacturing and of the nursery business, (sixty acres under glass), and is on the edge of Michigan's vacationland. The community is conscious of its responsibilities for maintaining a clean and healthful environment, not only for its own citizens but also for the comfort and protection of the many visitors to the city and surrounding area.

### Mayor Provides Leadership

After about 12 years of study and consideration, the City Commission, under the leadership of Mayor Albert A. Wagner, has taken the action necessary to solve a difficult problem of pollution abatement. A system of intercepting sewers and a sewage-treatment plant will be placed in operation this summer. The system will eliminate the discharge of raw sewage into the Clinton River within the city and provide treatment to prevent oxygen deficiencies and related nuisances in the river below the city.

The sewage system of Mount Clemens is almost wholly on the combined basis. The total flow is collected from 18 outfalls through diversion chambers in which the maximum amount of diverted flow is governed by hydraulic characteristics of the outlet, and from two outfalls by mechanical storm-water regulators. Three outlying pumping stations are included in the system. The treatment plant is located east of and downstream from the city, so that use of the three outlying pumping stations permits considerable reduction in the length of interceptors otherwise required. These pumping stations are all equipped with Yeomans pneumatic ejectors and designed for automatic operation.

The interceptors were designed to carry a maximum flow of 500 gallons per capita, from a future contributing population of approximately 30,000. The present population is about 16,000. Present maximum dry-weather flow is estimated at 200 gallons per capita.

The treatment plant is designed to handle an average flow of 3 mgd, a maximum rate of 6 mgd for primary treatment, and of 4 mgd for secondary treatment. Flows in excess of the 6-mgd rate, which may be expected during storms, will be by-passed for the present. When future development brings about the necessity for plant additions, it is expected that maximum plant capacity will be made equal to maximum interceptor capacity.

The treatment plant includes the main pumping station, and treatment units consisting of coarse screens, a communitor, a mechanically cleaned grit chamber, primary settling tanks, high-rate filters, final settling tanks, chlorine contact tank, digesters, and sludge-drying beds. The plant was designed to provide 75% BOD removal from a sewage flow carrying 5-day BOD averaging 5,100 pounds per day.

### Gas Engine for Pumping

Sewage entering the main building will first pass through coarse cage screens and then to either of the two suction wells. Three motor-driven pumps are provided of 1-, 2- and 3-mgd capacity, and one engine-driven pump with variable capacity of 1.5 to 3.0 mgd. The sewage pumps are of Morris Machine Works manufacture and the motors are by General Electric. The engine, equipped for sludge-gas fuel, is a Le Roi Model D-471. Space is provided for future installation of an engine-driven pump with a maximum capacity of 6 mgd. The pumps will operate against an average total head of 30 feet.

Sewage will first pass through a Chicago Pump Company comminutor, Model 25-A, provided with a manually raked by-pass screen, and then to the grit chamber. From the grit chamber, equipped with Jeffrey Mfg. Company grit-removal mechanism, the flow will go to a pair of primary settling tanks, built in bank with and of the same size and elevation as the secondary tanks.

The primary tanks provide a detention period of 2 hours at 3 mgd and an overflow rate of about 560 gallons per square foot per day. The tanks are equipped with sludge collector mechanisms of the chain-scraper type and tilting trough skimmers. Each tank has four longitudinal scraper flights and two cross collectors, all made by the Jeffrey Mfg. Co. Flow from the primary tanks passes to the suction well of the relift pumping station, from which it is pumped to the trickling filters. The filter distributors are designed to handle flows of 2 to 4 mgd and pumping capacity is provided accordingly. Two 2-mgd electrically driven units and one gas-engine-driven unit have been installed. These pumps are Fairbanks-Morse vertical mixed flow units, equipped with 15-hp Reliance motors, and a Le Roi engine arranged to use digester gas for fuel. It is not expected that sufficient gas will be available more than 50% of the time to operate the gas-engine unit in addition to that required for the main sewage pump and digester heating. It was considered economical to provide the gas-driven unit; however, it was necessary to also provide motor-driven units for auxiliary service and standby. The connections to the re-lift station suction well are arranged to provide continuous supply for whatever rate of pumping is selected, either from primary-tank effluent alone or supplemented by suffi-

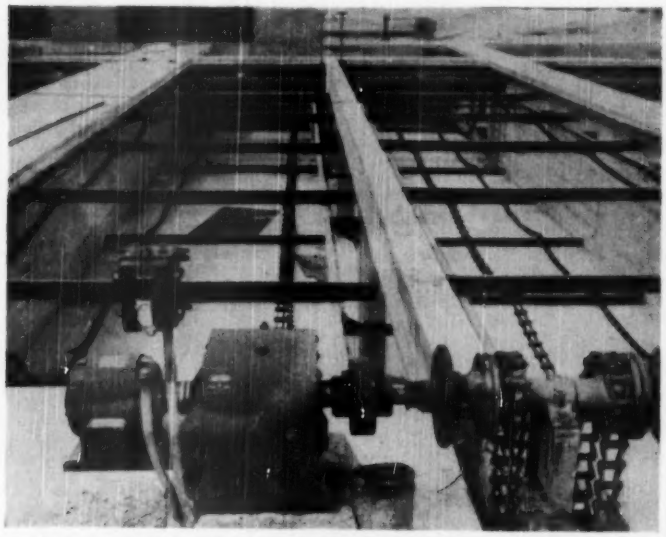
# Builds Sewage Treatment Facilities

cient recirculation of secondary-tank effluent to maintain the desired rate.

The two trickling filters are each 72 feet in diameter and contain a total of 1.12 acre feet of filter media. The dosing rate is 10.8 mg per acre per day as a minimum to 21.6 mgad maximum. Distributors are of the aero-filter type, manufactured by the Yeomans Bros. Company. The designed filter loading is 3,000 pounds of BOD per acre-foot per day.

As indicated above, the secondary settling tanks are of the same size and type as the primary tanks. After secondary and final settling, the flow passes either to the re-lift pumping station for recirculation to the trickling filters or to the chlorine contact tank. Facilities for diffusion of chlorine solution are located at the influent end of the contact tank, which will provide a contact period of 20 minutes at the designed average flow rate. Chlorinated effluent passes into the outfall sewer and is discharged into the river. Chlorination facilities consist of two Wallace & Tiernan solution-feed machines of 400-pound per day capacity each, and are connected to provide either pre- or post-chlorination, or the two applications simultaneously.

The two digestion tanks are designed functionally to provide digestion space in one unit and storage in the other. The digestion unit is equipped with conventional scraper mechanism with scum-breaker arms supplied by the Dorr Company. Continuous mixing of the contents is provided by recirculation pumps. Heating will be accomplished by means of combination oil and gas-fired external heating units through which a portion of the recirculated flow is passed. The two heating units are of Pacific Flush Tank Co. manufacture, each with a capacity of 250,000 BTU per hour. The main sludge recirculating pumps are Aurora Pump Company vertical centrifugal units of 700-gpm capacity, driven by 5-hp Reliance motors. Pumps serving the sludge heaters are also of Aurora make, and of 150-gpm capacity with 1½ hp Reliance motors. The digester will provide 25 days of digestion at designed loading.



**Settling tanks will have mechanical sludge-removal equipment. The building in the background is the relief pumping station serving the trickling filters.**

The secondary digester will provide 90 days of storage for sludge at designed loading, and is also equipped with a gas-storage cover with capacity of 30,000 cubic feet. This cover was also supplied by the Dorr Company.

Digester sludge will be dried on open drying beds of conventional type. Sludge removed from the beds will be transported in cars running on 24-inch gauge industrial track propelled by a gasoline engine locomotive. The site provides ample space for sludge dumping and storage.

In addition to housing the pumping station, the main building also provides space for two Ralph B. Carter Company plunger-type sludge pumps, an auxiliary water system, and a laboratory and office. A separate garage provides shelter for the Plymouth gasoline locomotive and two cars or trucks, together with the necessary overhead crane and grease pit for servicing mobile equipment. The auxiliary water system serves all plant requirements except for drinking fountains and toilet rooms which are served directly from the city system. The auxiliary system is supplied from the city mains, but is completely separated so that there is no possibility of back siphonage or cross connection to the city. The auxiliary consists of an air-cushioned pressure tank with necessary pumps and compressors, and distribution system, and has a designed capacity of 150 gpm.

### Cost of Project

The project had been estimated to cost about $800,000 in 1944, but when bids were taken in 1946 they totaled approximately twice that figure. Partial reason for the excessively high bids was the fact that a large portion of the interceptor had been designed for construction in tunnel, and by 1946 tunnel labor prices had literally gone "over the top." The 1946 bids were rejected and nothing was done until 1948. At that time the state authorities were insistent that the city proceed with the project in order that protection from pollution be provided for a recreational area then under construction by the Huron-Clinton Parkway Commission. The recreational area is located on the shore of Lake St. Clair, at a point not far removed from the mouth of the Clinton River. The plans were then re-studied in the light of the prevailing pattern of construction costs and a new route selected for the interceptor to avoid the necessity for tunneling. Changes were also made in the treatment-plant plans to eliminate or change such features as had been found to be unduly expensive under post-war cost conditions. In November 1948, revision of the plans was complete and the new estimated cost was set at $1,616,000. Savings due to plan revisions just about balanced the general increase in construction cost that had taken place since 1946.

Based on the new estimate, a bond

(*Continued on page* 171)

# Elizabeth River Bridge-Tunnel Will Reduce Traffic Tie-ups

WORK has been started on the construction of the bridge and tunnel project which is to provide a continuous highway crossing of the Elizabeth River between Norfolk and Portsmouth, Va. By the early spring of 1952, motorists will be moving between the traffic-congested cities in a matter of three or four minutes. The long lines of backed-up traffic and consequent delays at the ferry slips will be eliminated. A 25-year-old dream is becoming a reality at last.

The tunnel will pass under the south branch of the river from a terminal plaza in downtown Portsmouth to a plaza in Berkley. The bridge will span the east branch of the same river from the Berkley Plaza to the terminal plaza in Norfolk. The tunnel will be a two-lane toll facility with a capacity of 1,200 vehicles an hour in each lane. The bridge will be toll-free. It will have four lanes and two pedestrian sidewalks with a 178-foot, double-leaf, bascule span to provide a 150-foot clear navigation channel.

### Contractors Act Jointly

The tunnel contract went to the Merrit-Chapman and Scott Corporation, of New York; the Tidewater Construction Corporation, of Norfolk, will build the bridge. The concerns acted as joint contractors on an award of $16,263,642. Completion date is specified as 750 calendar days from February 21, 1950.

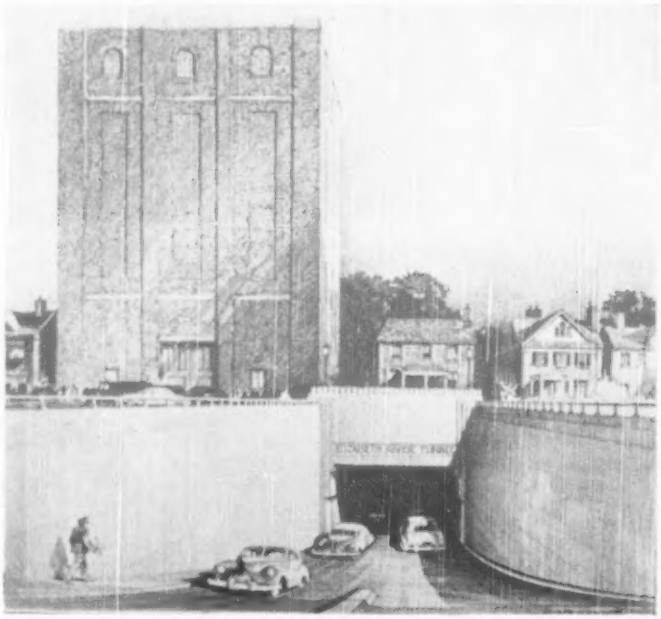
The Elizabeth River Tunnel Commission, created by Act of the Virginia General Assembly in 1942, has some $23,000,000 in the bank secured by its tax-free revenue bonds to build the project. The financing was through a syndicate of 17 investment houses headed by Alexander Brown & Sons, of Baltimore, and B. J. Van Ingen & Company, Inc., of New York.

Fifty thousand dollars advanced by the Federal Works Agency, now incorporated into the General Services Administration, for the early engineering studies and the preparation of preliminary plans has been repaid by the Commission into the U. S. Treasury. The interest-free loan was one of some 7,000 made under the first Advance Planning Program for non-federal public works.

### Administration

Thomas P. Thompson, Vice-Chairman of the Commission and former City Manager of Norfolk, has been made the executive director in charge of the project. The consulting engineers are Parsons, Brinckerhoff, Hogan & Macdonald, of New York, and the J. E. Greiner Company of Baltimore. A report on traffic surveys and estimated revenue from the proposed bridge-tunnel project was made in February 1947 by De Leuw, Cather & Company of Chicago.

The over-all length of the project from the Washington Street terminal plaza in Portsmouth to City Hall Avenue in Norfolk will be approximately 1¾ miles. The tunnel will measure 3,400 feet from portal to portal, with open and cut-and-cover approaches at either end. The divided roadway width will be 22 feet



**Architectural view of the tunnel approach and portal and ventilation building in Portsmouth. An identical building will be erected on the Berkley Plaza.**

with a minimum clearance of 14 feet. There will be a service walkway 2½ feet wide with utility lines and conduits carried in its slab.

The trench and pre-cast tunnel section will extend under the ship channel for 2,100 feet. This type of construction entails successive operations of dredging an open trench in the river bed, preparing a sand or gravel subgrade on the bottom, and towing and sinking the precast sections into place where they will be connected. Then the trench will be backfilled and the completed structure will be covered with a minimum of 5 feet of overfill. A 450-foot channel with a minimum depth of 50 feet can be maintained.

A ventilating building will be located adjacent to the Portsmouth portal, and electrically operated fans will be centrally controlled. Fresh air will be drawn through the portals. The spaces below the roadway slab above the ceiling slab will be used to exhaust the vitiated air duct.

An administration building and the toll booths will be located in the Berkley Plaza, where bus stops will be built.

### Bridge Details

The bridge will measure 2,135 feet from abutment to abutment, with grades of about 4.5% and 1.81% on the south and north approaches respectively. The shore portions of each of the four traffic lanes will be widened to provide necessary acceleration and deceleration ways serving the Berkley and Norfolk Plazas. In the closed position, the bascule span provides a vertical clearance of 48 feet above mean high water at the river channel.

### Timber Piles Used

Foundations of the abutments and piers on dry land will be supported by untreated timber piles, the permanency of which will be insured by establishing the elevation of the concrete footings at the ground-water level. Foundations for the river piers will be constructed in open cofferdams and supported on untreated timber or cast-in-place concrete piles. The bottom of the tremie seal will be sufficiently low to afford ample protection for the timber piles against teredos even if the river bottom were lowered to 30 feet below mean low water by future dredging.

The steel girder approach spans will be in lengths of 95 and 105 feet, with the flanges of the girders and stringers embedded in the roadway slab. The roadway deck will be reinforced concrete slab with an integral wearing surface.

The new bridge and tunnel are located to serve conveniently the through and local traffic without curtailment of the use value of the streets of either community. River transportation will benefit by the increased vertical and horizontal clearances of the proposed draw-span and by discontinuance of the present heavy ferry traffic.

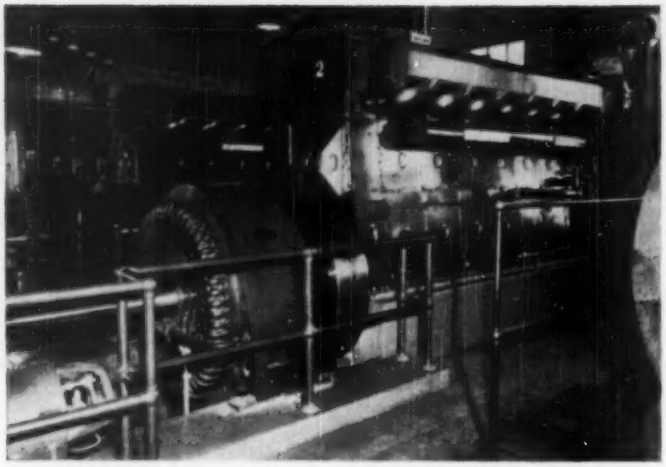
The entire Hampton Roads area experienced an extremely heavy population increase during the days of the defense and the war years, and many of these newcomers have remained. The future of the ferries is a matter of considerable concern to many people in Portsmouth. Traffic engineers feel, however, that the ferries must fold up. They have been operating in one form or another for more than 200 years. The city of Norfolk will receive $108,000 from the Tunnel Commission as reimbursement for the removal of the present Norfolk-Berkley bridge.

### Construction Authorized

The Norfolk City Council recently endorsed and the General Assembly has prepared a bill proposing a bridge-tunnel between Norfolk and Old Point Comfort. It authorizes construction by the State Highway Commission under the State Revenue Bond Act of 1940.

The members of the Elizabeth River Tunnel Commission, besides Mr. Thompson, are J. A. Anderson, Virginia State Highway Commissioner, Chairman; Dr. V. A. Brooks, Portsmouth; Delegate C. T. Humphries, Norfolk County, and former Mayor J. D. Wood, Norfolk.

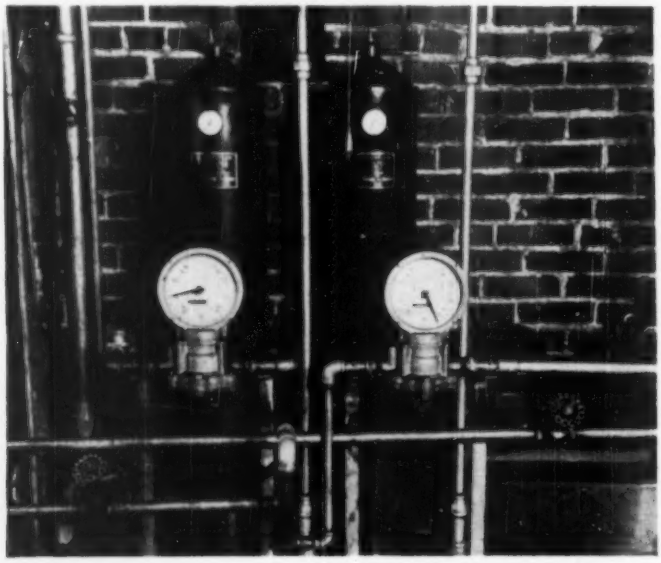
**Architectural view of the bridge between Norfolk and Berkley. The tunnel route is at the upper left.**



Exhaust sides of the new Superior diesel engines at the city power plant.

# Diesels for a Coal Town

**Freeburg, Ill., replaces steam with two dual-fuel diesel engines, saves $20,000 a year on fuel alone**



All the fuel oil is metered and passed through Hilco filters before removal.

A TWO-ENGINE diesel plant is earning dividends for Freeburg, Ill., by saving nearly $20,000 a year in the fuel bill alone. The anticipated advent of natural gas probably will increase fuel savings another $10,000 since these prime movers are Superior dual-fuel engines.

By experience and inclination, this community of 2,000 is a coal-burning town. Since 1903, power and light have been supplied by a succession of steam engines, the latest of which was installed in 1936. But economic realities can be powerful, and growing deficits convinced the municipality that a more efficient power plant had to be provided if rates were to be maintained. Like John L. Lewis, who put a gas furnace in his sister's home, Freeburg put diesel power in its light plant.

A number of problems influenced the choice of engines. The city wanted to keep capital expenditures down by using the old building. Yet it was necessary to keep the steam plant operating until the diesels were ready. A two-engine plant was indicated with good efficiency at partial loads. Oil was the best available fuel, but a supply of natural gas was expected, and it was obviously wise to provide for eventual use of the more economical fuel.

The engines chosen were two identical turbocharged, dual-fuel Superior diesels of 6 cylinders rated at 690-hp at 450 rpm. Each drives directly a 485-kw, 3-phase, 60-cycle, 2,400-volt generator with 10-kw, V-belted exciter. The engines now run on oil, but when the gas line reaches the plant it will be necessary only to push a button to switch over to operation on natural gas.

## Full Load in December 1948

The diesels were fitted into the plant without disrupting service and took over the full load in December 1948, after which the steam plant was dismantled. In the first nine months the diesels produced 1,331,760 kw-hrs. while consuming 108,580 gallons of fuel; an average of 12.26 kw-hrs. per gallon. This efficiency level was achieved with an average load of less than 40%. On October 11, 1949, the load varied between a low of 110 kw and a peak of 330 kw. Yet fuel consumption was kept down to levels considered satisfactory in many plants with a far more favorable load factor.

While production was increased from 996,600 kw-hrs. in 1948 to 1,331,760 kw-hrs. in 1949, expenses were actually reduced by $7,501.75. With the augmented revenue and the production economy, a loss of $6,211.64 in the first three quarters of 1948 was translated

into a net operating profit of $14,111.25 in the like period of 1949. It should be noted that the expenditures listed include the generating plant, the distribution system, and the business office.

A comparison of fuel costs is of particular interest. For the periods considered, the cost of coal was $0.0192 per kw-hr. The cost of diesel fuel was $0.0081 per kw-hr., a saving of $0.0111 per kw-hr. Natural gas should bring the fuel cost per kw-hr. to less than $0.003. Further, the load is increasing steadily and improved load factor will mean greater engine efficiency and greater fuel economy.

Standard 0.1 Nonpareil detergent-type lubricating oil is purified continuously in a four-element Hilco Hyflow lube filter for each engine. During engine operation, oil is drawn from the pressure side of the engine lube pump through the filter and into the sump tank. When the engine is not in service, a small motor-driven pump takes oil from the sump, puts it through the filter and back to the sump. Oil has never been changed and is not expected to be changed. Included in the lube-oil system are two Ross Heater oil coolers.

Diesel fuel is passed through Hilco Hyflow filters also before reaching the engines. The fuel is delivered from tank trucks into a 15,000-gallon tank and then is pumped through Buffalo fuel meters and the two-element filters into two 250-gallon elevated day tanks inside the plant.

Air for the engines is drawn through Air Maze viscous-impingement-type filters outside the building and is sent to the cylinders under pressure by the exhaust-driven turbocharger. Exhaust gases then vent through Maxim silencers outside.

### Principal Elements in the Cooling System

Principal elements in the closed cooling system are two Marlow evaporative coolers and two motor-driven centrifugal circulating pumps. Thermostatically controlled shutters on the coolers keep jacket water at specified temperature. Normally one cooler and one pump are used for each engine, but the piping permits alternate or combined use of pumps and coolers. City water is treated in an Elgin softener before it is used for makeup.

Beside each engine is a control panel with Alnor exhaust pyrometer and alarms on engine-lube pressure, turbocharger-lube pressure, jacket-water temperature, and overspeed. On the engine itself are additional gauges and a tachometer.

Distribution is still handled from the old switchboard, but two new engine panels and a swinging synchronizer panel were installed with the diesels. The modernization program calls for eventual replacement of the old board.

Starting air is supplied by two compressors, one driven by motor, the other by a gasoline engine. The first is controlled automatically to keep 200- to 240-psi pressure in the air tanks.

The plant is operated under the immediate supervision of Cornelius Nold, Superintendent of the Light, Water and Sewage Department. Major policy matters are determined in consultation with Village President Louis M. Schwalb and the six-man Board of Trustees. The business office is managed by Village Clerk Robert Browning.

Normal operating procedure is to run one engine for a full week, then switch to the other for a week. The reserve engine provides complete standby protection. The engines are large enough to allow for substantial load expansion and there is room in the plant for additional units when the need arises. Despite the initial unfavorable load factor, Freeburg's diesels have proven their value to the community. Every foreseeable change in the present situation will enhance that value.

# Practical Aids to Property Assessing

By C. W. TILLINGHAST
*Executive Director*
*The New Jersey Taxpayers Association*

AS A first step toward improvement of assessment administration in New Jersey, organized taxpayers in cooperation with state and local officials have launched a program to place "better tools" in the hands of local assessors.

The start is a 24-page illustrated booklet, "Practical Aids to Improved Property Assessing in New Jersey," published by the New Jersey Taxpayers Association following more than a year of study and preparation.

As in other states, improvement of the assessment administration in New Jersey has been a long-standing need of both assessors and property owners. Weaknesses in the assessing function, widely recognized throughout the nation, are also a familiar story here.

The Committee on Municipalities of the New Jersey Taxpayers Association began study of the problem more than a year ago. Results of subsequent discussions with officials and organizations were coordinated with the Association's own staff studies. Tentative report drafts were then submitted to interested state and local officials. This brought in many additional suggestions which were incorporated in the final report.

### Aid Proves Valuable

Aid and advice from such organizations as the Municipal Assessors Association of New Jersey, an affiliate of the New Jersey State League of Municipalities, proved valuable. Cooperation also was extended by the president of the New Jersey Association of County (Tax) Boards, Commissioners and Secretaries. Officials of the divisions of taxation, local government, and local taxation of the State Department of Treasury also cooperated. The state treasurer distributed copies of the final report to each of the more than 1,000 local assessors and other officials concerned with the assessments in New Jersey.

The completed report deals with the problem at its foundation—the local assessing office. Here it was found "better working tools" must be provided. These were listed as:

(1) an adequate assessment-records system;

(2) an up-to-date tax map outlining a block-and-lot system for the identification of all property within the municipality, and

(3) adequate standards of value for use in placing values on individual holdings.

Each of these is considered in separate sections of the report. Illustrations include suggested forms for the basic real-property record, the personal property record, the property owner's assessment record, assessment control, and tax rolls for real and personal property. Suggested tax maps are shown for urban land and for rural land as well as a land-value map for the urban areas.

Realizing the importance of public interest and understanding of the all-too-technical assessment problem, the Taxpayers Association has undertaken —again in cooperation with others—an extensive program of public education.

Because of unprecedented demand for copies of the report, the Association has found it necessary to place a charge of $1 per copy to persons and organizations outside of New Jersey. Inquiries should be addressed to the New Jersey Taxpayers Association, Broad Street Bank Building, Trenton 8, N. J.

# Eyesore Becomes Memorial Park

By ANTHONY S. MILEWSKI
*Mayor*
*Spring Valley, N. Y.*

IT HAS often been said, "A curse may turn out to be a blessing."

No truer application of this axiom can be found than in the transformation of the Spring Valley swamp and dump into the Memorial Park, for that which was the curse of the community truly turned out to be a blessing.

Spring Valley (1950 population, 4,492) is located in the center of Rockland County, in the foothills of the beautiful Ramapo Mountains, less than thirty miles from New York. Despite the one big curse—the swamp—Spring Valley, through the years, had developed quite a reputation as a health resort. Its water is tested to be the best in the state. Its elevation of 500 feet is said to be invigorating and healthful. Its central location in the county makes it a natural trading center, and its Main Street carries more traffic than any other shopping street in the county. Many people who work in New York City find it convenient to live in Spring Valley and commute by bus or train. Yes, everything was lovely in Spring Valley—except for the swamp.

## Swamp Became Dump

Ever since the natives could remember, that big swamp was there. As the village grew, it built itself around the swamp until the swamp was the geographic center—only 150 feet east of the main business section. These 28 acres of dismal land, for want of a better use, became the village dump. Conditions became increasingly worse. Myriads of mosquitos and rats infested it, and when the wind blew from the east, Main Street was soon evacuated. There were periods when these acres of trash and garbage would catch fire and a great pall of smoke would hang over the village for days.

Just such a situation came about in September 1944 while St. Joseph's Roman Catholic Church, which borders on the dump area, was celebrating its Golden Jubilee. All was in readiness for Cardinal Spellman—when the dumps began to burn again. This was the last straw. The writer, as chairman of the Jubilee, determined that the dumps must go and the swamp be eliminated. So with the help of hundreds of other citizens who shared that same determination I campaigned for and was elected Mayor in 1945, together with my running mates, Frank Haera and William Stetner, on the platform, *"Eliminate the Swamp and Dump Now!"*

## Procedure

To say the swamp would be eliminated was easy; to do it proved a long, hard pull. First, the land had to be purchased. Up until then several attempts had been made without avail. An offer of $90,000 for half the property had recently been refused. Even if it could be purchased, where would the money come from—taxes? The village would not and could not stand it. Then there were other problems. Opponents to the idea spread the following stories: "Construction of a park would cost a million" — "Bulldozers would disappear in the sink holes"—"There is no bottom in that swamp." And still others said: "A park out of that swamp?—when you see hair growing in the palm of my hand."

At the time of the mayoral election, the swamp and dump area was owned by two different interests. The lower portion, or swampiest part, belonged to Gustave Knauth; the upper area, to the heirs of the Samuel Lawler Estate. Previous Village Boards had tried to force Knauth to sell by continually raising his assessment until it was ten times greater than that of the Lawler Estate for an equal area of land. This action, together with a score of others, had created ill will which made the purchase by the village from Mr. Knauth next to impossible. However, I approached Mr. Knauth with an entirely different attitude. Admitting that the Village had been unfair, I suggested that the swamp could and would be converted into a park, provided the public so desired and would pay the purchase price by popular subscription. To make a long story short, both interests agreed to sell directly to me and signed agreements to that effect. The land that at various times could not be purchased for $100,000 was sold for $18,000.

In order further to protect the property after the option expired, and the $18,000 purchase price was raised and paid, the title was placed in the name of two co-workers, Charles E. DeBaun and Jack Pesner, as well as my own. Raising money was the next problem. It was felt that the village should not be bonded for a park, so it was decided to appeal to the general public for contributions.

## Townspeople Enthusiastic

At meeting after meeting, public enthusiasm knew no bounds. The writer, now legally the owner of the property, was propositioned on every side to sell and to enter into schemes for personal profit. At one open meeting, an individual of worth offered $40,000 profit for the option on the property. The satisfaction of refusing such a lucrative offer comes to very few men in a lifetime. It was mine, and the answer would have been the same at any price. It had been decided that the swamp was to become a Memorial Park—and that was that.

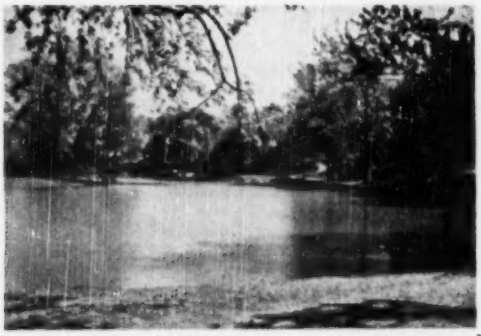
This was also done so that a portion of the land could be sold to Main Street property owners to give them property lines straight and parallel to Main Street. Each property owner on Main Street, adjacent to the Park property, was offered an opportunity to purchase to this line, making all lots 150 feet in depth. This sale netted $10,000.

The drive was on for funds. Everybody was approached, by mail or phone or in person. Over 350 individuals and organizations gave nearly $60,000. Donations ranged from $1 to $5,000.

Preliminary soundings and surveys were made during the summer under the direction of Village Engineer O. G. Aselin, who assured us that the plan for the park was sound and could be carried out for about $100,000. Work started as advertised on October 15, 1945. On that day a backhoe ripped out the remains of the old dam a mile downstream from the swamp and started upstream to cut a channel 14 feet wide by 4 feet deep in order to drain the

## SPRING VALLEY—THEN AND NOW

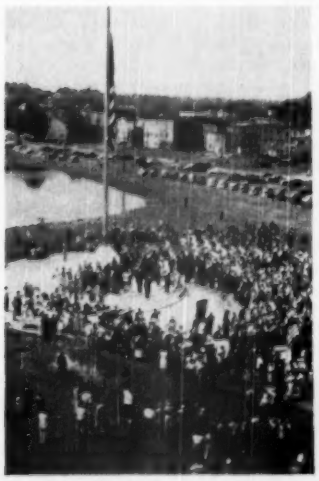
View from the railroad trestle. Work is begun on cutting the channel to lower the water in the upper swamp.



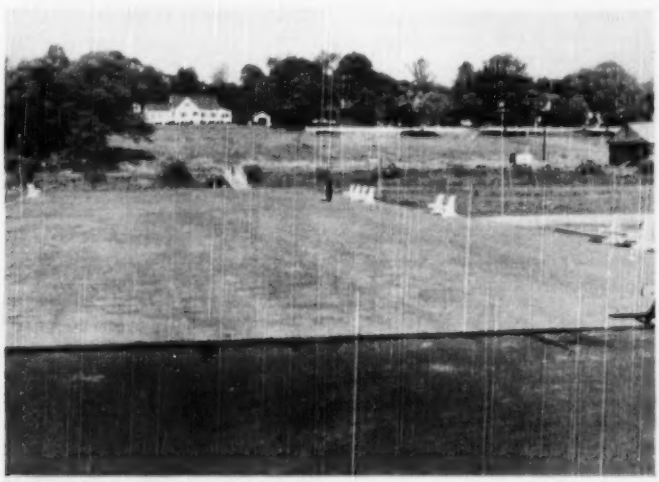
The same area after excavation, showing restored dam. The picnic area is directly across the lake.

The north end of the dump was, until work had started on it in 1945, the home of mosquitoes and rats.

The same location today is an athletic field. A Youth Center under construction is shown in the background.



Dedication of the Veterans' Memorial, May 30, 1950.



Outdoor roller skating and dancing area. A bench can be "bought" for twenty-five dollars and the purchaser's name placed on it.

entire area—especially the big swamp. Two weeks of operations found the backhoe at the Erie Railroad trestle, but, alas, engineering tests showed that at the trestle the footings were not deep enough to stand the channeling. Then came the big delay, with new sketches, new plans, and approvals needed. Meanwhile, the backhoe was moved into the area between the railroad trestle and Lawrence Street Bridge and an attempt was made to move from the Lawrence Street Bridge up. The mud was too deep; the mats could not hold the heavy machines. The attempt was abandoned for the time being and the backhoe moved to the upper portion of the park area, cutting the channel downstream. Work continued until December 15, when bad weather called a halt.

A second phase of operation was in progress at the same time as the channeling—leveling off the old dump and laying in the base for the parking area. Nearly 38,000 yards of hard fill were dumped in the rear of Main Street for the big new parking area. It was shovels, trucks, and bulldozers for the next two months, ever digging, carting, and filling; and there were days when a thousand yards would sink out of sight and no progress was shown for the day.

Through the winter the campaign for funds continued, and by Spring operations started again. Meanwhile, a park commission was formed to give moral and financial support and allay the fears of those who felt that the park would be a political or commercial enterprise. The Steering and Planning Committee decided that operations would continue only as funds are available.

The next step was the athletic field, and by the fall of 1946 grass was growing on it—an area greater than the Yankee Stadium Ball Park.

Engineer Aselin advised that ramps be built into the swamp area so that dragline and clam-shell equipment could operate when the lake was dredged out. By July, the ramps, made by using dump-trash mixed with hard fill, were completed with the aid of a No. 10 bulldozer.

Most of the work to date was done by the Ward Bulldozing Company on a daily basis. The next move was the big lake, and the Ward bid was low. Work started at once and continued until the middle of the spring of 1947.

In 1947-48 a bridge was constructed across the creek; the playground was built and equipped; the parking area had its first surfacing, and there was more bulldozing around the lake.

In 1948 contributions were still coming in from both individuals and organizations. The Lions Club was an outstanding supporter. School students did a major portion of the grading and seeding around the lake.

A professional ball diamond for the athletic field was built in 1949. The roller skating and dancing area was paved and lighted. The approach to the Memorial was laid out. The parking area was paved; the dam built; the lower lakes finished, and the picnic grove graded.

In 1950, the Youth Center was started; the flag pole was erected; the willows were planted; the memorial approach was finished; benches and boats were added, and the memorial was finished and dedicated.

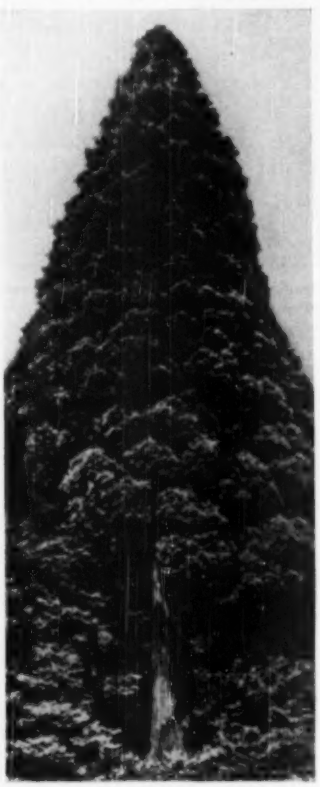
Looking at the park now, it is easy to forget that only a short time ago the same area was a health hazard—a black eye to the village and a curse to the community. Only our moving-picture record, kept from the inception, stands to bear witness to coming generations that this area was once a swamp and a dump.

But now all this belongs to the past; the Memorial Park is a reality.

# Parks Can Grow Redwood Trees

LUTHER BURBANK said, "Don't build me a monument—plant a tree!" City and county officials in many parts of the country have the same idea. And they would like to leave as a living monument, not just an ordinary tree, but a magnificent Giant Redwood that may stand for centuries to come.

This has long been believed to be impossible anywhere but in California, but it is a fact that Redwoods are already growing successfully in a number of widely scattered regions. The oldest Sequoia east of the Rocky Mountains, a Sierra Redwood planted about 1856, stands in the Tyler Arboretum in Lima, Pa., a suburb of Philadelphia. The farthest-north Sequoia in the East, about 60 years old, grows in Bristol, R. I., on a private estate near Narragansett Bay. This tree survived the 1938 and 1944 hurricanes, which destroyed 385 other trees on the estate. Another smaller tree of the same species stands in the Morris Arboretum at the University of Pennsylvania. Lancaster, Pa., also has a fine Sequoia.



**The farthest-north Sequoia gigantea, on the estate of Mrs. C. A. Lyon at Bristol, R. I. It is about 60 years old, 64 feet tall, 8 feet in circumference.**

*Sequoia sempervirens*, the Coast Redwood of California, has not succeeded so far north, but there are a number of vigorous specimens in Carmel, S. C., Norfolk, Va., and other Southern cities along the Atlantic.

The transplanted Californian who is fostering the planting of Redwood trees in other states is W. Warren Anderson, owner of the Anderson Advertising Agency of San Francisco. Gathering seed from the native Sequoia forests, he has worked out his own methods of growing Redwoods, and has induced several nurserymen to grow trees for shipment to suitable climates.

The Rare Plant Club of Kentfield, Calif., now has five species ready for planting, and expects to continue seed importations and growing until all fifteen species are available for planting in suitable climates.

Most of the trees are shipped at two or three years of age, because very few older trees are available, young trees are easier to ship, and total costs are less.

A handbook, *You Too Can Grow a Redwood Tree*, describes proper methods of planting and care, and assists in the correct choice of Redwood species suited to various climates. This booklet is distributed at cost, for 50 cents postpaid, from the Rare Plant Club, 208 McAllister Ave., Kentfield, Calif.

TULSA, OKLA.

# *Pay-As-You-Go* Refuse-Disposal Service

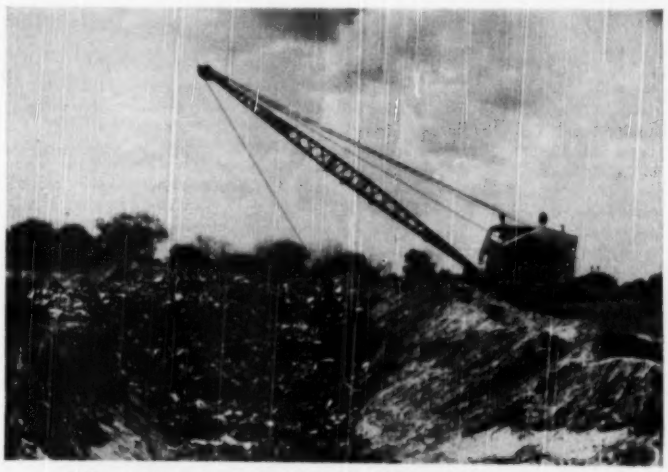
***Collection fees put this activity on a self-supporting basis***

IN TULSA, Okla., the work of refuse collection and disposal is a going concern that supports itself on a businesslike pay-as-you-go basis. It operates as a municipal utility with its own billing and accounting departments. It uses the best of refuse-collection equipment and disposes of the refuse in a well-operated sanitary fill.

This service operates under the direction of Ralph Ingalls, Superintendent of the Refuse Collection Department, servicing over 35,000 single units twice weekly, and large apartments and commercial businesses on a daily basis. Superintendent Ingalls considers it a bad day if he has more than 10 complaints, and he can list the number of such days on one hand each year.

The department employs 115 men on the collection trucks and a total of 150 men in the department. It makes a charge of $3 per quarter per family, and negotiates a higher charge with business and industrial customers based on the amount of work involved. The crews make back-yard collection in residential areas on a schedule of twice a week, and alley collections at night in the business area on a nightly frequency. The crews collect an average of 350,000 pounds of refuse per day. The fees bring in a total of over $400,000 per year.

An Allis-Chalmers tractor with a Drott Bullclam blade compacts the refuse at the sanitary landfill as a Leach Packmaster truck delivers a fresh load.



A Bucyrus-Erie dragline trims up the ditch receiving the refuse.

### Varied Assortment of Trucks

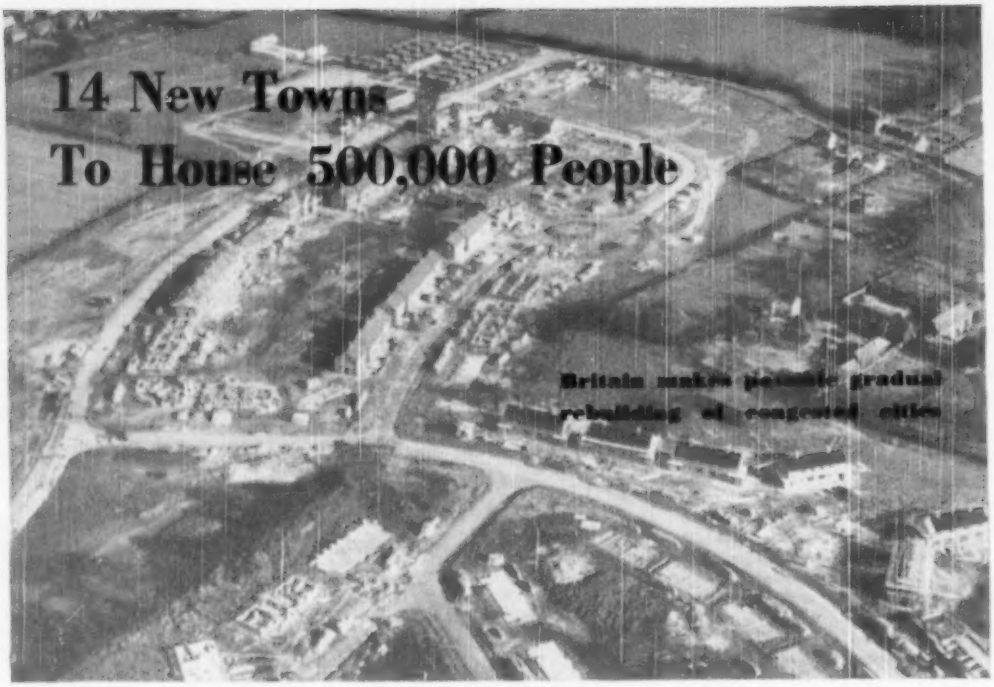
The department uses 35 collection trucks. Two are Heil bucket-type, holding 9 cubic yards. Seventeen are Gar Wood Load-Packers holding 12 cubic yards, one is a Leach Packmaster holding 15 cubic yards, and 15 are open-type with scow beds. These trucks will average from 3,000 pounds per load for the small trucks to almost 12,000 pounds for the large.

The city uses the sanitary-fill method of refuse disposal. In various areas, suitable waste land is being reclaimed by the method. So far about 40 acres of land have been filled in the past four years.

The fills are shaped up by dragline with a ditch width of 10 to 15 feet and a depth of 10 to 15 feet. Refuse is packed into them to a depth of 10 to 12 feet and then covered with a 3-foot layer of dirt. A D7 Allis-Chalmers tractor with an 8-foot Bullclam bucket, one D6 and one D7 Caterpillar tractor, and two draglines are used in operating the two sanitary fills. The city also has one small 50-ton incinerator but finds it more economical to use the landfill method as long as suitable areas hold out.

The refuse department of the City of Tulsa operates directly under Mayor Roy Lundy, with W. R. Wooten, City Engineer, as Director of Public Affairs.

# 14 New Towns To House 500,000 People




PHOTOS COURTESY BRITISH INFORMATION SERVICES

Aerial view of the Adey field area of the new town being built at Hemel Hempstead, in Southern England.

By F. J. OSBORN
*Chairman, Executive Committee Town and Country Planning Association of Great Britain*

FOURTEEN new towns have so far been designated in Britain under the New Towns Act of 1946—twelve in England and Wales, by the Ministry of Town and Country Planning, and two in Scotland, by the Scottish Department of Health. The Ministry in each case chooses the site, which, after a public inquiry, is purchased in such stages as are necessary. Ownership and development of each town site is entrusted to a separate corporation having eight or nine part-time members appointed by the Minister. The bulk of the capital required is being provided by the Government, though some will come from private firms and residents taking sites on lease and building their own premises.

## Reduce Journey to Work

New towns are not meant to replace existing cities. Their purpose is to make possible the gradual rebuilding of overgrown and congested cities on more open and human lines without adding to them more suburbs, which lengthen the daily journey to work. Surveys show that, to do this task competently, it will be necessary in the next 20 years or so to reduce the population of the congested cities by several millions—London alone by over a million. The intention is to save any further spreading of the big cities into their precious green belts. Instead, new towns are to be built, and existing small towns expanded right outside the green belts. Planned provision will be made in them, not only for homes for the "overspilled" people, but also for their factories and other industries.

Eight of the 14 new towns (Stevenage, Hemel Hempstead, Welwyn Garden City, Hatfield, Harlow, Basildon, Crawley, and Bracknell) are within 30 miles of London and will receive part of the Capital's overspill of population and industry under the regional-dispersal policy. Another (East Kilbride) fulfills a similar role for Glasgow and the Clyde Valley cities of Scotland. Two others (Newton Aycliffe, in Durham, Northern England, and Cwmbran, in South Wales) provide for industrial development in mining areas where unemployment is feared. A further two (Peterlee, in Durham, and Glenrothes in Fife, Scotland) will function as new centers for expanding coalfields where population is now too dispersed and inadequately housed. The 14th (Corby in Northamptonshire, England) will take care of expansion of the steel industry in an important ore-field.

## Densities to Be Low

The sites acquired vary in size from 2,500 to 7,000 acres, and the ultimate populations aimed at are from 30,000 to 60,000, except at Bracknell, where the figure at present proposed is 25,000. The over-all town densities vary from about 12 to 15 persons an acre, including industrial sites and playing fields (but not the open space and agricultural land surrounding the new towns).

On some sites there is a substantial original population; on others very little. Altogether, these 14 towns may absorb nearly 500,000 of the three or four millions that will ultimately have to be housed on new land in Britain.

Further new towns are, therefore, needed and, in addition, many existing small towns will be expanded.[3] Much of this expansion, however, will be undertaken by private agencies in the ordinary way or by public-housing schemes promoted by local municipal authorities. Some small-towns have applied for the setting up of new towns' corporations; others resist any such proposal, preferring to look after their own development.

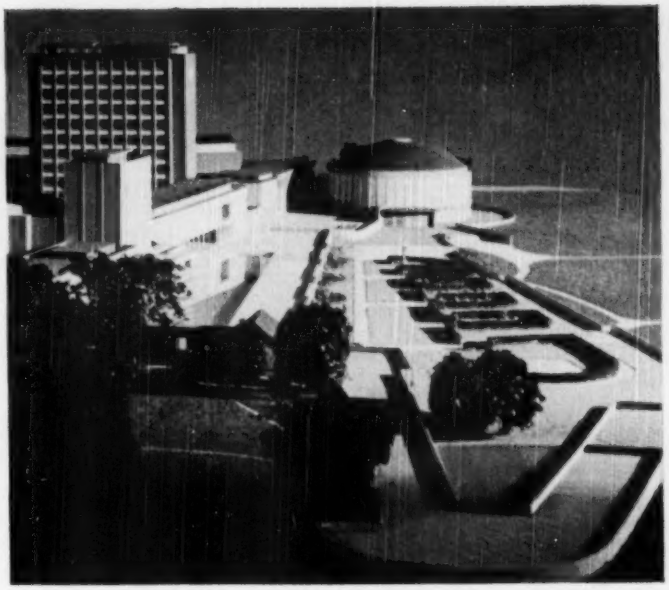
### Progress to Date

Surveys and outline plans for most of the 14 towns named are well advanced, and some have been submitted to the Ministries for approval. Few houses and factories have yet been built, however, because survey and planning takes time, and as a rule a considerable amount of water-supply and drainage work has to precede building. Some of the towns could have progressed faster, but have been held back by national restrictions on capital expenditure in view of the dollar situation. Only those intended to serve immediate industrial needs and mining areas are allowed to build at maximum speed.

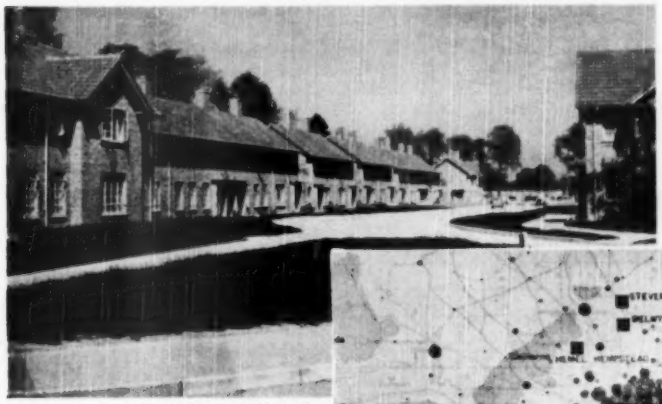
In congested city areas considerable public hopes of better living conditions have been aroused by the new-towns project, and there is also enthusiasm for them in the mining areas. From such quarters comes the criticism that the rate of development is disappointingly slow. The farmers and some of the residents in the areas selected for the towns, on the other hand, resist the project vigorously. Through the public inquiries they have ample chances to state their objections, and some modifications of the areas taken have been made. To a large extent the objectors have been successfully conciliated.

Of the £50,000,000 ($140,000,000) allocated by Parliament for the new

(*Continued on page* 169)

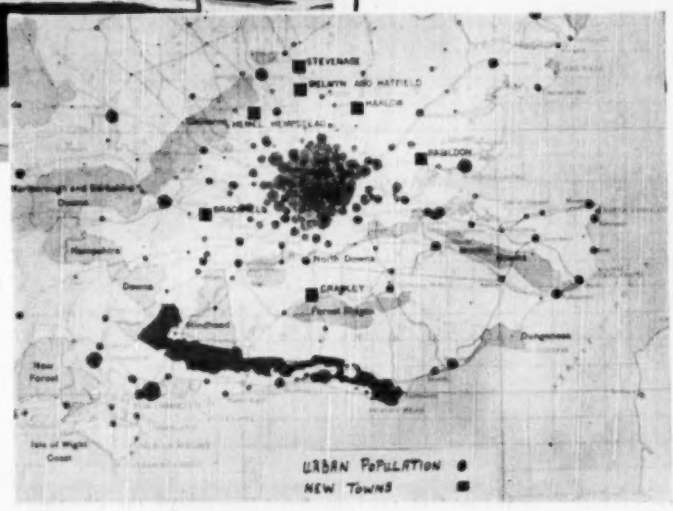


A plan for the new town of Harlow as envisaged by Town Planning Consultant Frederick Gibbard. The circular building is the Civic Hall.



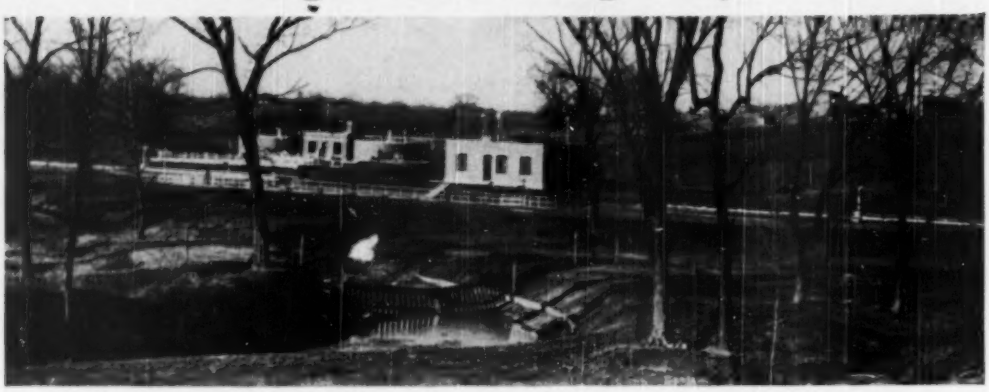
PHOTOS COURTESY OF BRITISH INFORMATION SERVICES, NEW YORK

Top: A completed row of houses in Crawley, Surrey, one of the 14 new towns being built in Britain.




Right: Map of southeastern England showing sites of proposed new towns in the outer London area.

# Sewerage Planning Pays Off



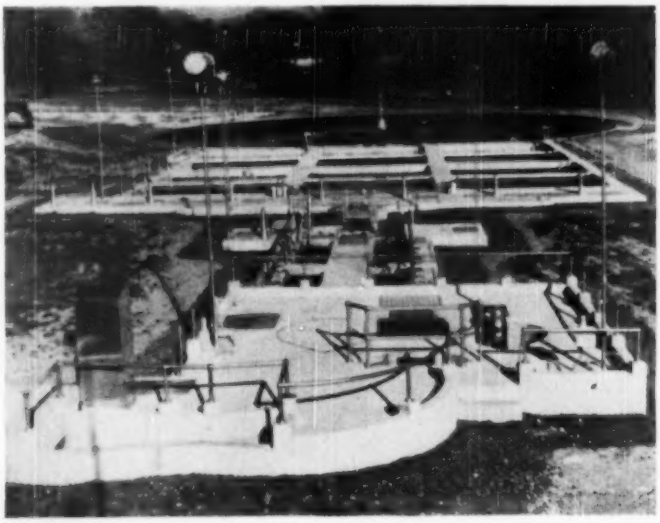
The new plant is attractively located in a hilly area on the outskirts of the city.

**Winchester, Va., completes a sewage treatment plant whose construction was blocked by war, by post-war material shortages and by the price uncertainties**

By M. H. KLEGERMAN
*Alexander Potter Associates*
*New York, N. Y.*

ON December 8, 1941, a day following a date that will remain important in our country's history, the writer had the unusual duty of delivering an engineering report to the City Council of Winchester, Va., recommending various sewage improvements including the construction of a new treatment plant. This had to be delivered with the knowledge that no matter how important this was locally, the nation had a more difficult task in hand than that of purifying the sewage of Winchester, Va.

The City Council also was fully aware of this situation. And with good logic, it decided to continue the preparation of engineering plans and in fact do everything short of actually building the project itself, and postpone construction until the close of the war.



Comminutor, aeration tanks, clarifier, and filter stretch out in an orderly line as seen from the roof of the control building serving the digesters.

## Financing Arranged

This much-heralded post-war period, however, did not in itself produce any great simplification of the situation. With it came a great readjustment in our economic life that probably is still going on. Here again, however, the people of Winchester exercised their good judgment and realized that the higher costs were to an extent counterbalanced by an unusually favorable financial picture.

To make financing possible, the people voted seven to one that bonds be sold that brought the attractive net rate of 1.438%. Contracts for the construction were awarded in 1948, and the construction completed in February 1950. Even with this financing, the uncertain price of equipment made it necessary to raise the complete amount of the contract price by transferring money earmarked for other public improvements that the city felt were less urgent.

The sewage-treatment problem that the city faced was created by both domestic and industrial wastes discharged into a small stream that ultimately finds its way into the Potomac River. The city has a residential population of

about 16,000. Its industry is almost exclusively apple-processing and is seasonal. During the apple-processing season, these plants discharge wastes having a characteristic analysis as follows:

| | |
|---|---|
| BOD | 800 ppm |
| Suspended solids | 150-400 ppm |
| Total solids | 2,000-5,000 ppm |
| Total volatile solids | 1,400-3,500 ppm |

There are a few other industrial wastes contributed on an annual basis from a woolen mill, a small abattoir, a poultry-dressing plant, several dairies and a laundry. During the fall of the year, in the apple-processing period, the industrial flow equals that of the sanitary sewage. During the rest of the year it is about 40% of the domestic flow.

### Treatment Details

To provide treatment, two-stage biofiltration with facilities for pre-aeration and separate sludge digestion was selected. Hydraulic capacity provided was 2.4 mgd for average conditions and 6.0 mgd for maximum flow. The filters, digesters, and sludge beds are designed on a BOD and solids loading basis to care for an "equivalent population" of 30,500 people. The recirculation ratio to the primary filter may be varied from 1.0 to 2.5 with 1.5 being normal. Recirculation ratios to the secondary filter may be varied from 1.0 to 2.0, with 1.0 considered average.

The plant uses a Link-Belt channel-type grit chamber 30 feet long and a Parshall flume with an 18-inch throat. Coarse solids are macerated in a 25-inch Chicago Pump Company comminutor before the sewage proceeds to the balance of the treatment process. The plant uses three primary clarifiers, each 12 feet deep by 20 feet wide by 70 feet long, with Link-Belt sludge removal equipment. It uses two high-rate trickling filters, each 125 feet in diameter with a 3-foot rock depth and Dorr Company distributors. It has two final clarifiers, each 8 feet deep by 33 feet in width and 115 feet in length. They are equipped with Link-Belt sludge-removal equipment.

The plant has two sludge digestion tanks, each 43 feet in diameter with a 24-foot side-wall depth. Their total digester volume is 70,000 cubic feet. They use Pacific Flush Tank floating covers and heat exchangers to pre-heat the sludge. The sludge-drying beds have a total area of 30,500 square feet, or one square foot per capita of equivalent population. The plant uses Fairbanks-Morse propeller-type recirculation pumps and centrifugal sludge pumps.

The plant was designed to receive 7,500 pounds of five-day BOD during the fruit-canning season, when the loading on the trickling filters will be two pounds of BOD per cubic yard of stone; at other times of the year the loading will be 3,900 pounds, or about 1 pound per cubic yard of stone.

The primary clarifiers provide a detention time of 1.5 hours at a recirculation ratio of 1:1½; that is, a total flow equal to 2½ times the raw-sewage flow. Final tanks provide a detention time of 2.25 hours at a recirculation ratio of 1:1, or twice the raw-sewage flow. Settling rates are 1,430 and 630 gallons per day per square foot of tank area, respectively, for primary and final clarifiers.

The construction cost of the plant was $650,036. A main outfall sewer also was constructed at a cost of $117,853, consisting of 11,500 feet of 24- to 27-inch vitrified tile pipe. Certain lateral sewers and water-main extensions were built at the same time, to run the cost of the outfall sewer to $185,377.

## East Hartford Promotes New Industry

EAST HARTFORD, Conn. (estimated population, 31,600), is a municipality determined to maintain its war-time industrial population, and employment potential. Active steps are being taken both to promote new industry and business and to establish a "job clinic" to offer guidance to workers who want to find their proper places in the labor market.

Although a suburb of Hartford, East Hartford is an industrial city by virtue of the existence within its boundaries of the mammoth United Aircraft Corporation, manufacturers of Pratt & Whitney engines and Hamilton Standard propellers. Although the industry pays almost two-fifths of the town's taxes, it has created the need for more schools and for increased municipal services.

Town officials want to attract more industry in order to broaden the tax base and cushion the town against an economic catastrophe, such as possible loss of the aircraft firm. John W. Torpey, Town Council President, proposed the creation of a Development Commission to concern itself with such problems.

Through an act of the State Legislature in 1949, an East Hartford Development Commission was established. Ten unpaid civic and business leaders were subsequently appointed to it. Within six months after the commission was organized, it published an attractive 16-page brochure in color, with 37 pictures, three charts, and a map, and including information about the town's industries, shopping centers, cultural, educational, and recreational centers, civic organizations, and transportation and power facilities. Seven thousand copies of the brochure were mailed to industries in seven Eastern states. A similar number was mailed to property owners in the town, as a matter of information and public relations.

**The cover of the brochure published by the local Development Commission.**

### Available Facilities

East Hartford's low tax rate (22 mills) and its good location were both stressed in the booklet, and have undoubtedly been important in stimulating a flow of inquiries to the Commission after the mailing of the brochure.

A "job clinic" is also being formed, patterned after something started by the New York Advertising Club and publicized in the *Reader's Digest* for October 1949. A group of unpaid civic and industrial leaders will screen, question, and offer guidance on vocational opportunities. This service will also give industries planning to settle in East Hartford a clearer picture of the availability of skills and labor. The clinic, established as the Employment Advisory Committee to the Town Council, will be free and voluntary for all who want its services.

## *United Nations Films Available*

A DESCRIPTIVE listing of 18 United Nations films, available from regional distributors at low-rate rentals to community groups and gatherings, has been published by the Film Distribution Unit, United Nations, 1600 Broadway, New York, N. Y.

The films are from 10 to 35 minutes in length, and show the work and programs of many divisions of the United Nations. For further information, write to the Film Distribution Unit.

# St. Louis Rebuilds *with balanced civic improvement program*

**Scale model showing how the John J. Cochran public-housing project, now under construction in St. Louis, will look when completed. Buildings are of different heights. Adequate recreational facilities will be included.**

By JOSEPH M. DARST
*Mayor*
*St. Louis, Mo.*

AN OVER-ALL program for "balanced" civic improvement is being developed in St. Louis that will rebuild the city's blighted areas and replace them with public and private housing and other structures important to the city's future growth. The multi-pronged effort includes the following elements, which will be used in specified areas:

1. Public housing
2. Combination of public housing and urban redevelopment
3. Urban redevelopment with federal aid
4. Urban redevelopment under the Missouri Act alone
5. Purely private development on land leased from the city

As pre-requisites for embarking on a comprehensive improvement program, the city has available: an official comprehensive plan for the development of the city as a whole, prepared by the Plan Commission upon authorization by the Board of Aldermen; a new comprehensive zoning law, and a Minimum Standards Housing Ordinance. The Plan Commission has published an official map designating reconstruction areas and indicating sites for both public-housing and urban-redevelopment projects.

In 1948, a $16,000,000 local bond issue for an urban-redevelopment program failed of adoption, largely because no adequate provision was made for the relocation of the families in the areas to be reconstructed.

## Housing Given Top Priority

Upon assuming office in April 1949, I gave housing top priority on my agenda, and gave full support for the passage of the Housing Act of 1949. After this was enacted by Congress, the city administration immediately moved to take maximum advantage of its provisions, especially Title One and Title Three. The necessary resolutions and ordinances for full participation in the Title Three public-housing program were speedily prepared and adopted by our Board of Aldermen. As a result, last fall 12,000 low-rent units were assigned to St. Louis for the five-year program contemplated by the Act, with 5,800 units to be constructed in the first two years. The St. Louis Housing Authority was given a new grant of power by the Board of Aldermen to execute this vast program.

## First Post-War Public Housing Project

Ground is being broken this month for the John J. Cochran public-housing project, which consists of 12 multi-storied buildings on a parklike tract of 17.94 acres. This is the first public-housing project to be constructed in St. Louis since the eve of World War II, and it is the first project under the Housing Act of 1949 to get under way in the Midwest region, served by the Chicago office of the Public Housing Administration.

The project will have 3,456 rooms divided into 704 family units ranging from one to five bedrooms. There will be two 7-story buildings, six 6-story buildings, and four 12-story buildings. They will be oriented to provide sunlight in each apartment at some time every day, and each apartment unit will have a balcony. There will be a day nursery, a community building for athletic events, handicraft classes and the like, and outdoor recreational facilities, including tot playgrounds, a baseball field, and sitting areas. Each building will have coin-operated laundry facilities as well as conventional laundry aids. Cost of the project will be about $8,000,000. Rentals, including all utilities, will range from $16 to $46 a month, depending upon income and size of family.

We are also advancing on the redevelopment program, which is made up of several ingredients. First, of course, is the 1949 Housing Act. Then there is the Missouri Urban Redevelopment Corporations Act, the Mayor's Committee on Urban Redevelopment, and the Land Clearance Commission. Every one of these is essential. The federal and the municipal governments agree to bring down the costs of ground by sharing, on a two-to-one basis, the write-down losses; and the state, through the redevelopment act, permits a degree of tax exemption for 25 years to urban-redevelopment corporations which, in turn, are limited to an 8% return on their investments.

## City's Leaders Raise Equity Capital

The principal task of the Mayor's Committee on Urban Redevelopment, to which I appointed 20 of the city's most prominent business, professional, and civic leaders earlier this year, is to raise equity capital and to form one or more corporations under the Missouri Act for acquiring and improving the ground to be made available under terms of the Federal Act. Encouraging progress has been made in the effort to raise several million dollars of equity money, and many business firms have already pledged sums running into six figures apiece.

The city government, of course, must give impetus and direction to the en-

tire program. For both legal and practical considerations we recently determined it would be best to create an independent municipal agency, to be called a Land Clearance Commission, to address itself solely to redevelopment activities. The Housing and Home Fiance Agency has allocated $5,196,000 to the city for the initial stages of the program.

### Merger Planned

While public housing and urban redevelopment are, legally and otherwise, separate and distinct, we plan to harness them together in some of our larger undertakings. A prime example is the DeSoto-Carr project, to be built in what is probably the worst neighborhood in the city. Tentative plans call for 2,490 low-rent public housing units and 750 urban redevelopment units. The latter project, of about 25 acres, while an integral part of the whole, will be confined to the northeast corner of the site and be separated from the other projects by a wide street and park.

The Mayor's Committee on Urban Redevelopment is giving particular attention to the downtown area between City Hall and Union Station, in the immediate vicinity of Memorial and Aloe Plazas, as the first proposed urban-redevelopment project. Such a project would serve a threefold purpose: provide urgently needed housing for middle-income families; clear a blighted district at the threshold of the business district, and form a link between our two great plazas, creating one 8-block-long mall flanked by monumental public buildings (including the City Hall) and also by tall apartment houses.

Not many blocks west of this site, negotiations are under way with the International Basic Economy Corporation, headed by Nelson A. Rockefeller, to reconstruct a 100-acre area for 1,000 to 2,500 families, with mass-production concrete houses similar to those already erected in Norfolk, Va. These would rent for from $40 to $45 a month, and would be financed with an FHA-guaranteed loan and under the provisions of the Missouri Urban Redevelopment Act.

Grading and excavating is already under way on another project, which will be built and managed by Webb and Knapp, Inc., of New York City as the result of a unique arrangement with the city. The $5,000,000 project, known as Hampton Gardens, is on a 32½-acre site formerly occupied by a little-used municipal cemetery, or "Potter's Field." The land has been leased from the city at $100 a year for 75 years, at the end of which time ground and improvements revert unencumbered to the city. The agreement also provides that the corporation building the project pay full taxes on its properties and shoulder the burden of relocating the municipal cemetery.

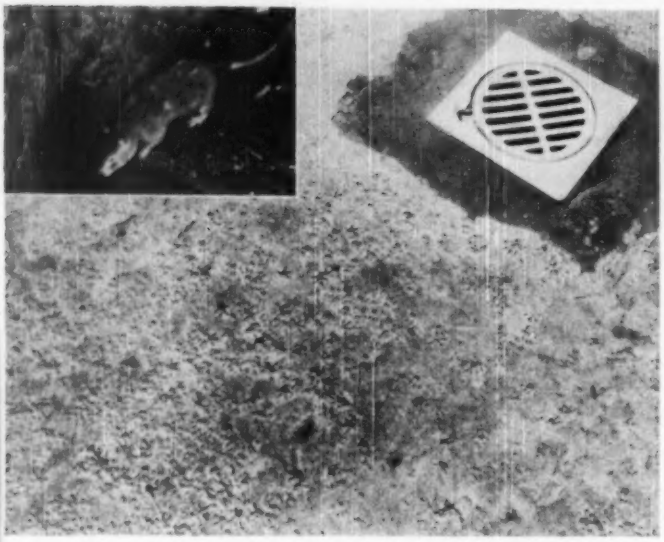
There will be 510 apartment units in 45 two-story buildings and 14 three-story buildings. The 3½- to 4½-room units will rent for $82 to $105. The project will be financed under FHA-608 provisions, but the standards for the project and its apartment units considerably exceed FHA minimum requirements. There will be about 15.4 families per acre, and 13.7% coverage of the area with buildings. Five acres will be devoted to play space.

After 50 years of talk, investigation, and study, we are getting action. Combining the efforts of the federal and local governments and private capital, we intend to provide for our ill-housed and save our city from the mortal effects of slum disease.

DRAWN BY HUGH FERRIS FOR THE "ST. LOUIS POST DISPATCH"

**A dramatic night interpretation of the suggested development of the downtown St. Louis west border. The artist's view looks northwest from the roof of the Federal Building, at Twelfth and Market Streets, and shows the area between Memorial and Aloe Plazas, currently being considered as the first urban-redevelopment project to be proposed by Mayor Darst's Committee. Apartment houses for moderate-income families are depicted in the background. The *St. Louis Post Dispatch* gave vigorous support to planning, housing, and urban redevelopment in a series of articles prominently featured in its Sunday rotogravure section this spring, entitled "Progress or Decay?—St. Louis Must Choose." A 24-page rotogravure reprint on full newspaper-size paper has been made of the series; 20,000 copies are to be used in St. Louis public-school classes next fall, and the parochial schools are taking 15,000 copies for this purpose. The reprint may be obtained upon request from the *St. Louis Post Dispatch*.**

# Akron's Four-Point Rat Control Program



**Rat tracks in wet cement basement floor near a newly installed floor drain. The rats used the old drain as an entry-way and were trapped in the building when the structure was rat-proofed. The inset shows a brown Norway rat entering a building through a break in the foundation. This type, commonly found in Akron, is the largest and most vicious in the rat family.**

By CHARLES E. SLUSSER
*Mayor*
*Akron, Ohio*

PUBLIC ENEMY NUMBER ONE—the scavenging, disease-ridden rat—is fighting a losing battle in Akron, Ohio.

The rats' ranks have dwindled from an estimated 500,000 in 1945 to 175,000 today. And their death rate is still soaring.

Akron's rat-extermination program has proved so successful that the U. S. Fish and Wildlife Bureau considers it "one of the nation's finest."

This industrial metropolis, however, doesn't depend on a miraculous "Pied Piper" to woo away the pestiferous rodents. Its combat strategy employs the house-to-house, sweat-and-swing technique.

Primarily, the city's rat-control program is based on these four points:

- A city ordinance with "teeth" in it
- Rat-proofing of buildings
- Large-scale extermination
- Public education

On the surface, this program appears simple. As in other forms of warfare, however, a capable field general—wise in all phases of battle—is the prime requisite for success.

Akron, in this case, has been fortunate in having the leadership of J. D. Straitiff, the city's rat-control supervisor. Mr. Straitiff — one-time city health inspector — is considered one of the nation's top experts on rat warfare. Last year, he was loaned to the U. S. Government for four months and helped establish rat-control programs for a score of cities in Ohio, New York, and Pennsylvania.

He first became interested in rats in 1945, when complaints began swamping the Akron Health Department. According to plaintiffs, the city's downtown stores, office buildings, and industrial shops were swarming with rodents. Mr. Straitiff was selected to cope with the problem. He attended a rat-control school conducted in Cleveland by the Fish and Wildlife Bureau of the U. S. Department of Interior.

His first job on his return was to secure a city ordinance which would form the backbone of the project. For a time, he was virtually ignored by the Akron City Council. However, Straitiff enlisted the help of the Izaak Walton League, the Fish and Wildlife Bureau, and other civic welfare groups. Together they succeeded in obtaining the necessary legislation.

The ordinance since has been used as a model by Dayton, Ohio, Ashland, Ohio, and other cities.

First, the ordinance states that it is unlawful for the owner or occupant to maintain property in a rat-infested condition.

Second, it defines strict regulations for the rat-proofing of existing and future buildings and empowers the city health department to enforce these regulations.

The ordinance also outlaws the dumping of refuse and feeding of wildlife and pets, except under specifically stated conditions.

Thus armed, Mr. Straitiff and his assistant—Dana E. Williams—were able to get their rat war under way. On their first tour of the downtown business district, they found 50% of the buildings and almost all of the restaurants and grocery stores infested with rats. Today, less than 5% are infested.

### The Rat-Proofing Process

Biggest factor in this reduction has been rat-proofing. Cost of making a building invulnerable to rodents ranges from one to several thousand dollars. In each case, however, the control officer has been able to persuade the building owner—who must bear the expense—that rat-proofing more than pays for itself. Average cost for a commercial building is about $150, Akron statistics show.

In rat-proofing, the initial step is elimination of all refuse and waste materials, inside the building and on surrounding property. Such materials might include stacks of lumber and firewood, non-metal trash boxes, and such rat delicacies as laundry soap, candles, and wax paper.

Second step is the plugging of all possible entrances — broken windows, foundation tiles, loose-fitting doors, basement drains. Breaks in building foundations should be filled with at least 3 inches of concrete and the outside of the structure should be flashed 18 inches above ground with metal or concrete.

The final move is the extermination of the rats trapped inside the building. If there are many, the use of a profes-

# Proves Highly Successful

sional rat exterminator is advisable.

Akron's program of extermination is pushed on two fronts: In business and residential sections, and in large breeding centers such as city dumps.

The dumps are covered with poison every spring and fall. This year, the Akron Junior Chamber of Commerce pitched in with the job of spreading the poison.

For this job, zinc phosphide—a deadly killer—is used in the form of rolled "torpedo bait." This poison has been found to be most satisfactory. It is

**Cheese contaminated by rats in an infested storage shed behind a produce market. Rat-proofing measures eliminated hundreds of thousands of dollars of damage in Akron markets.**

also recommended by the Fish and Wildlife Bureau. A grain-based bait is used since dogs, cats, and other domestic animals usually by-pass cereals.

The first time the city dumps were poisoned five years ago, rats were so thick they ran in droves. This spring, however, 12 workers failed to spot a single rat.

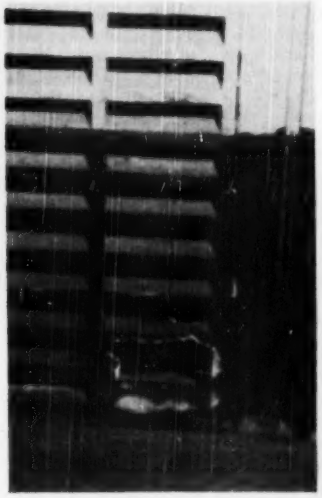
For downtown alleys and public property in populated sections, fortified Red Squill is used. Tests have found it to be efficient, yet not particularly harmful to pets. Such locations are also covered each spring and fall.

Akron rat-control officials are continually working closely with the Fish and Wildlife Bureau in testing new poisons. The latest is a powdered chemical which breaks down the red corpuscles. Rats may absorb it internally and feel no ill effects for some days afterwards.

This type is designed primarily to foil the crafty rat who sometimes senses danger in prepared bait. Mr. Straitiff has seen cases where veterans have prodded younger rats into eating a suspicious tid-bit, watching the reaction before feasting themselves. This poison, however, is still in the experimental stage.

### Public Education Important

The final point—public education—has been cited by Mr. Straitiff as one of the most effective weapons in striking at rats in one of their least vulnerable spots—the grounds of residences.



**Hole gnawed by rats in a ventilator grating of a grocery store. The boards, more than one inch thick, were gnawed through in a single night. The grating was rat-proofed by erecting heavy wire screen behind it.**

Sometimes the best residential sections involve the most perplexing rat-control problems. Bird lovers and rock-garden enthusiasts, who are prevalent in better neighborhoods, often unknowingly attract rats to their localities. Bread thrown out for the birds also feeds the rats. Rock gardens, and kindling wood piled outside for later use in fireplaces, offer perfect nesting places.

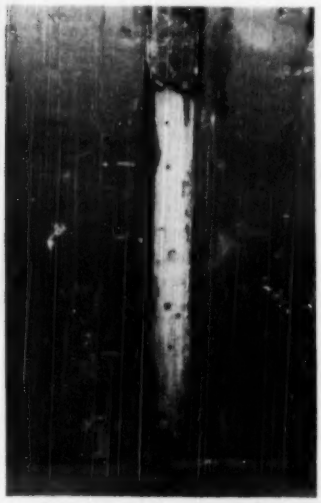
Mr. Straitiff cited the example of a housewife in an exclusive residential district whose grounds were over-run with rats. Complaints from neighbors took the control supervisor to her home. During the conversation, the woman explained that she set out a loaf of bread each day for the birds which flocked to her door.

The control officer pointed out the rats were getting more of the bread than the birds and suggested she erect a rat-proof bird feeder. A short time later, the pests were gone.

The Akron Health Department, with the help of Boy Scouts, periodically distributes to homes literature on rat control. The pamphlets include instructions on correct use of poisons and traps, methods of constructing bird feeders, and rat-proofing homes.

Also, Mr. Straitiff presents numerous talks before high school groups, garden clubs, and women's organizations. The talks are illustrated with movies and slides. *The Akron Beacon Journal* and local radio stations help by publicizing the rat-control program.

Akron's program can be adapted to any community as the problem is basically the same nation-wide. Sanitation is 75% of the battle, as shown by Akron's experience. If the rat has no place to hide and no food to eat, it cannot survive.



**Wooden doors with corners gnawed off by rats, providing entrance way. Wooden doors should be flashed with metal to ward off the rats.**

# Spartanburg Dedicates Filter Plant

**R. B. Simms Filtration Plant, recently enlarged, honors superintendent with 30-year record of service**

POWER PURE WATER RECREATION SERVICE
THE R. B. SIMMS FILTRATION PLANT
DEDICATED BY RESOLUTION
THE COMMISSIONERS OF PUBLIC WORKS
OF
SPARTANBURG, S. C.
R. E. STALLINGS TAYLOR BLALOCK
J. FRANK HELDERMAN
IN RECOGNITION OF THE OUTSTANDING VISION AND SERVICE OF
SUPERINTENDENT R. B. SIMMS
1949

By BOBBIE EARLENE KELLER
*Secretary to the Superintendent*
*Department of Public Works*
*Spartanburg, S. C.*

CELEBRATION of the dedication of the R. B. Simms Filtration Plant in Spartanburg, S. C., is a fitting honor to the veteran public servant who did most during the past quarter century to make this municipal improvement possible.

By official act of the Commissioners of Public Works—R. E. Stallings, Chairman; J. Frank Helderman; and Taylor Blalock—Spartanburg's water-purification plant was re-named the "R. B. Simms Filtration Plant" in honor of the superintendent who has served faithfully and with great credit for 30 years.

When Mr. Simms first started his work with Spartanburg Water Works, it was small, drawing from several creeks near the city. Water was treated in a plant consisting of a sedimentation basin and wood-tub filters that discharged into an open clear-water well. It was pumped from there into the system by two steam-driven cross-compound engines.

In 1924, an engineering study by the late P. H. Norcross, consulting engineer, disclosed that the existing supply soon would not meet the increasing demand. The people even then showed faith in their water works leader by promptly voting approval of a bond issue that would make the work possible.

Mr. Simms, in a newspaper article, assured the people of the Commission's wholehearted determination to provide "water in quality for the new-born babe and quantity for the largest industry and most hazardous fire."

The new filtration plant was to be located at South Pacolet River, about 12 miles from Spartanburg. The river rises in the foothills of the Blue Ridge Mountains at an elevation of 2,000 feet and descends rapidly to an elevation of 720 feet in the river bed at the dam. A reinforced concrete dam of the Ambersen type was constructed at the head of shoals in the river, thereby enabling the water to flow by gravity through a 78-inch penstock line down to the power house with sufficient force to generate power for pumping.

The power house is one of the outstanding contributions of Mr. Simms to the success of the water works; it is in part responsible for the exceptional financial and growth record of the water works. In spite of the fact that Mr. Simms could secure only partial engineering confirmation, he was willing to "go out on a limb" and insist that a power house be built at the time of the plant's construction in 1926. It amortized its cost in 20 years, and now pays an annual return to the department of $60,000. Water is released to flow back into the river after it passes through the power house, helping to prevent claims from riparian water users further down the river.

The filtration plant consisted of two mixing and sedimentation basins and six 1-mg filters, discharging into a 750,000-gallon protected clear-water well. Pumps located in the power house discharged water through a cast iron supply line to a treated-water reservoir about three miles from the plant. From this tank the water still flows by gravity through a cast-iron pipeline to the city, where proper distribution pressure is maintained by a pressure regulating valve. A 1.5-mg elevated tank is maintained in the approximate center of the distribution system to insure uniform pressures and a volume of water for fires.

Several improvements were made later. The third improvement (made in 1939) was the largest. Additions were a new sedimentation basin, a mixing chamber, a 3-mgd filter, a 5-mgd pump, a 20-inch-diameter steel discharge line to the high-level reservoir, and a 24-inch gravity line of spiral welded steel to the distribution system. This line is protected with spun bituminous enamel lining, and is bituminous coated and wrapped with asbestos felt.

These additions increased the normal filtration plant capacity to 9 mgd. However, the war years increased the demand to an average of 8.3 mgd and a maximum of 11.3 mgd in 1945, the peak consumption year of the war.

The same engineering firm which made the study of 1924 (Wiedeman and Singleton of Atlanta, Ga.) made a prediction that pumpage would be 7.8-mgd by 1950 (average). The 1949 average was 7,400,000. A further prediction was that pumpage for the year 2,000 would be 20 mgd.

### Fourth Increase

Plans for the fourth enlargement of the plant began in 1947. Construction of these additions was completed just prior to May 10, the day of the dedication of the "new" plant.

An additional 3-mg-capacity steel ground-storage tank was constructed by the Chicago Bridge and Iron Company to operate along with the old three-mgd reservoir. This tank is lined with Koppers bitumastic. A new sedimentation basin, with walls of cantilever construction, has been built. The basin is equipped with electrically operated Walker Process Company sludge-removal equipment in the first 20 feet to cut down the necessity for cleaning. The tank provides 30 minutes of retention at a 3-mgd rate. It is arranged so that additional basins may be added as needed.

Equipment for handling one-ton chlorine containers, a new tram rail and a storage room, a 1,000-pound Wal-

lace and Tiernan chlorinator and a chlorine-residual recorder have been added. Thus the operator may keep a constant check on the chlorine content of the water.

A new Walker Process propeller-type flash mixer, which serves both the old and new mixing basins, has been installed. Alum and lime are now fed into the raw-water influent line between the Simplex rate-of-flow controller and the mixing chamber.

Palmer agitators for washing filter beds have been installed in each filter.

### Dedication at Rainbow Lake

The dedication ceremony itself was held overlooking lovely Rainbow Lake, another interesting feature of the work of Mr. Simms. It is a 4½-acre natural lake, of 12-mg capacity, with a ¾-mile shore line, half surrounded by wooded crests covered with poplars, pines, and ancient oaks. Water is carried into the lake by gravity through two overflow pipes, one near the power plant, another not far from the diving platform. There is also a fountain entrance, which can produce a spray almost 100 feet high. The bathing area is equipped with a concrete sloping floor, as well as a diving tower and floats. Four life-guards are employed for the summer season, and a concession stand and bath-house overlook the lake. Dotted on the hills surrounding the lake are rustic picnic pavilions.

The crescent-shaped lake had its beginnings when construction men working on the original filtration plant called a ponded place in the creek "Bob's Swimming Hole." Mr. Simms began to think in terms of a real swimming hole, and soon after he began to carry his idea to completion. Now thousands of people enjoy its recreational facilities, free of charge.

One of the most interesting parts of the dedication was the bronze plaque which was erected in the lobby of the filtration plant. Showing in bas-relief the growth of a water-works from a mountain stream, it features "Pure Water, Power, and Service." With Mr. Simms' portrait above the depiction of industrial users, the small cottage, and (important to him) a church, who benefit from the water works' service, the plaque reads in part, "in recognition of the outstanding vision and service of Superintendent R. B. Simms."

Mr. Linn H. Enslow, vice-president and editor of *Water and Sewage Works*, was the principal speaker at the dedicatory ceremonies. Mr. Enslow is a former employee of Spartanburg Water Works.

At a barbecue for his water-works friends given by the Commission the following night, the Commissioners presented Mr. Simms with a leather briefcase on which his name was engraved in gold. The employees of the water works gave him a gold watch and a pearl-handled pen knife, inscribed, "30 years' service."

The Spartanburg Chamber of Commerce presented him, appropriately, with an engraved silver water pitcher. He received many other gifts and congratulatory letters.

Mr. Simms' activities have not been limited to the water works of Spartanburg, however. He was instrumental in organizing the Water Works Association of South Carolina, serving as its first president. This has been converted into a Water Works and Sewage School, training operators of the state and vicinity.

He was first president of the Southeastern Section of the AWWA, was at one time president of the local Kiwanis Club, director-treasurer of the Y. M. C. A., and has long been active in his church. At present, he is a deacon and chairman of the Building Committee for a new Youth Memorial Building, and is a director-at-large of the S. C. Water and Sewage Works Association.

He has a total of fifty years to his credit in the water-works industry. Before he started his work at Spartanburg he was with the water works in Atlanta.

The R. B. Simms Filter Plant. The new sedimentation basin is in the foreground.

Rainbow Lake, popular play center, is one of the dividends which came through the services of its water superintendent.

# How Aerial Surveys Function

**Their accuracy and low cost make them an important tool for the city engineer and planning official**

By CHARLES M. HODELL
*Vice-President*
*Aero Service Corporation*
*Philadelphia, Pa.*

YOU can put aerial mapping to work for your city for about the yearly cost of a clerk in the city planning commission's office. Maybe less.

A detailed photo mosaic for city planning purposes ranges in cost from a few hundred to a few thousand dollars. Its cost depends on the size of the city and the scale of the mosaic. Obviously, a mosaic of Philadelphia and its environs, made up of hundreds of pictures covering about 500 square miles, costs more than a similar project for a city the size of Bangor, Maine.

Both the metropolis and the smaller city, however, can put a photo-mosaic to good use. Commonly called a photomap, the mosaic has good horizontal position in areas of low relief. For over-all planning work it is extremely useful. Per unit of cost, it is probably the best map that can be made.

### Subdivision Planning

Last year, many more Americans joined the move to urban centers. In finding room for these new city-dwellers and the many who preceded them during the war years, the city administrator and his staff are faced with serious problems of city growth. The photomap helps to plan new subdivision layouts, gives the over-all view needed for the selection of new playground sites, and provides needed data for studies of industrial land use and storage, traffic flow, and transportation.

For detailed engineering planning, requiring elevations, the aerial topographic map is needed. These maps are used by the city engineer for the relocation of streets and the laying-out of by-passes, under-passes, or over-passes to break traffic-flow bottlenecks. Boulevard approaches and exits can also be designed and located with the aid of these maps. The topographic map has a further use in sewerage and drainage problems. In planning extensions to the storm-sewer system, "topo" maps help define the catchment area accurately and provide vital facts on the degree of slope and the size of the area itself, so that the size and grading of the sewer line will be adequate.

A reliable aerial topographic map can be compiled from the same aerial photographs employed for the photomap. The aerial photos are viewed stereoscopically and elevations traced with highly precise stereo-plotting instruments. These photographs are supplemented by field-survey data, which provide several elevations per photograph.

**Talbot Jones, Assistant Land Planner of the Philadelphia City Planning Commission, points to an area where a new project is being considered, on the Commission's precise aerial mosaic of Philadelphia and its environs. The map was prepared at a scale of 1 inch to 1,320 feet.**

### Costs Lower Than Ground Surveys

What do aerial topographic maps cost? They vary according to scale and contour interval. But aerial methods cost substantially less than ground surveys. In Cleveland, Ohio, for instance, G. Brooks Earnest, Director of the Cleveland Regional Geodetic Survey, estimated that plane table mapping cost approximately $7,500 per square mile, whereas aerial methods cost less than half this amount. Significant savings have been effected too in the recent aerial mapping of Cincinnati, Ohio, and Mount Vernon, N. Y.

Big savings in time are also achieved by aerial mapping. Mapping the Cleveland area—450 square miles—by plane table methods would have taken more than a century with the three field parties available. It is a three-year task by aerial means.

But, says the civil engineer from Missouri, *how accurate* are the maps prepared by aerial methods? In Cleveland the field checks of 26.29 miles of profiles against the profiles from the photogrammetric method showed 95.4% within one-half contour interval. None of the remainder exceeded one contour interval, the interval being two feet in this instance.

Many modern highways are designed and located with topographic maps compiled by aerial methods. The Pennsylvania Turnpike Extensions, for example, are based on aerial mapping completed at a fraction of the cost of ground surveys. In all, Aero Service Corporation has accomplished 1,043 miles of highway mapping by aerial techniques for more than a dozen states in recent years. Aerial mapping methods are also used widely by civil engi-

neers in industry, especially in the coal and metal mining fields. Today, the photogrammetrist can meet every demand of engineering accuracy.

Good planning of the mapping project can bring substantial savings. If the mapping work is postponed until it is an emergency project, with rush deliveries all the way, it will cost more, for the same reasons that an emergency repair of the city sewerage system is more expensive than work done on routine schedule. No less cost-important is the selection of the best map scale. The larger-scale map is more expensive. But it is possible that a smaller-scale, lower-cost map will be adequate most of the time, except for certain small areas. In these areas, the city engineer's staff can obtain spot data as needed. Selecting a map scale adapted to general needs does mean some compromise in requiring over-all, detailed information. But today, when most cities are looking hard at their operating budgets, it can be a sensible way to stretch the tax dollar. Choosing the map scale should be done with the sound advice of the city engineer, who will know what limit is practical.

Appropriations for the city mapping work may be a problem. In some instances, the money is appropriated directly by the city council. In others, the appropriation may be included as a part of the budget of the city engineering or city planning staff. Still other communities have interested county, state, or federal agencies in undertaking the mapping as a joint project with a sharing of costs and data. The mapping work may be set up as a two-, three-, or five-year project, rather than a single, lump-sum outlay during one fiscal year. It is only recently that the citizen has begun to see maps as blueprints for his city's future—and immediate industrial and residential future at that. The man who approves a multi-thousand dollar expenditure for a new bridge or throughway may still need to be sold on an outlay of money for planning and location mapping.

**The relief model presents the facts in quickly understandable form to the layman. Here the map information has been recorded on a flat plastic sheet which is formed under heat and pressure in a negative mold. Relief models, conventionally cast in plaster or phenolic resins, are also used.**

If city fire-fighting equipment is antiquated, the taxpayer can see it rattle down the street, and his rising fire-insurance rates remind him to do something about modernizing the department. But when his city's maps are out of date (and many of them are, through no fault of the city administrator or engineer)—the taxpayer needs to be sold the need for new maps.

### Large-Scale Mosaic Displays

In selling city planning to the citizen, large-scale aerial photographs and photo-mosaics are very helpful. They can be used in displays, in special reports and literature, in releases to the local papers. They are understandable to the layman. But city planning cannot be sold with topographic maps, which most taxpayers find a complex and obscure sort of shorthand, to the chagrin of both the city engineer and the photogrammetrist. The aerial mosaic or photo enlargements pay for themselves many times over in getting quick understanding of the physical facts of the problem area.

Today the city engineer benefits from the advancement of photogrammetric techniques in many directions during the war. For a good many years the aerial method's accuracy has been established, and broad war-time use has made aerial mapping a faster, more economical tool than ever.

## *Human Relations—The Most Important Of All Relations*

WITHOUT in any way underemphasizing the important influence which the home constitutes, I believe that the school must be considered as a most important agency in the teaching of the art and science of human relations. We must shift the emphasis from the three *r's* to the fourth *r*, human *relations*, and place it first, foremost, and always in that order of importance, as the principal reason for the existence of the school. It must be clearly understood, once and for all times, that human relations are the most important of all relations. Upon this understanding must be based all our educational policies. We must train for humanity, and training in reading, writing, and arithmetic must be given in a manner calculated to serve the ends of that humanity. For all the knowledge in the world is worse than useless if it is not humanely understood and humanely used. An intelligence that is not humane is the most dangerous thing in the world.—From ASHLEY MONTAGUE'S book, *On Being Human*, copyright 1950 by Henry Schuman, Inc., New York.

## *"No Smoke Means More Work From Less Fuel"*

WITH THIS slogan on its letterhead, the Bureau of Smoke Control of the County of Allegheny, Pittsburgh, Pa., has been doing an outstanding job in enlisting the cooperation of industry to the end that, as a result of research, industrial air pollution can be better controlled.

In the Bureau's first annual report, handed to the Board of County Commissioners in July, Thomas C. Wurts, Director, summarizes the progress and activities of the Bureau during the year ending June 1, 1950.

# *Newspapers*

# Are Planners' Best Friends

**Twice-weekly articles about planning-in-progress sustain citizen interest and secure citizen support**

By MARIAN S. EDSALL
*Director of Planning Publicity*
*Swanson Associates, Consultants*
*Bloomfield Hills, Mich.*

CITY planning is an "ivory tower" occupation, and a community plan is only $5 worth of scrap paper—*until* and *unless* they are brought to the attention of every citizen, and the meaning, aims, and methods of planning are widely understood.

An effective and informative means of telling the planning story has been used in Champaign-Urbana, Ill., through the cooperation of the two local newspapers. The citizen advisory committee, newspaper editors and reporters, and the consultant firm of Swanson Associates, engaged to prepare a long-term comprehensive development plan, worked together during the period of plan preparation to keep every citizen informed of the step-by-step planning procedures through a twice-weekly series of newspaper "feature" articles.

Over a period of six months these articles went behind the scenes with the planners as they carried out their preliminary research and surveys.

Thus, as the land-use study was completed and tabulated, an article appeared headed, "HAVING TROUBLE FINDING A LOT? IT'S NO WONDER"; material from the study, such as the fact that Champaign-Urbana has less than half the normal amount of vacant land within its corporate limits, was discussed in terms of what it meant to the average citizen and to the future growth of the community.

## Traffic and School Location Discussed

As traffic, schools, park and recreation, housing, etc., were studied, and the results compiled, the facts and figures were likewise discussed in down-to-earth terms. For example, the article about traffic studies stressed that some changes in the existing street system would cut cross-town driving time by one-half, and at the same time protect residential neighborhoods from high-speed traffic; an article about future school location and distribution told how 16 properly located schools could do a better job than the 19 existing.

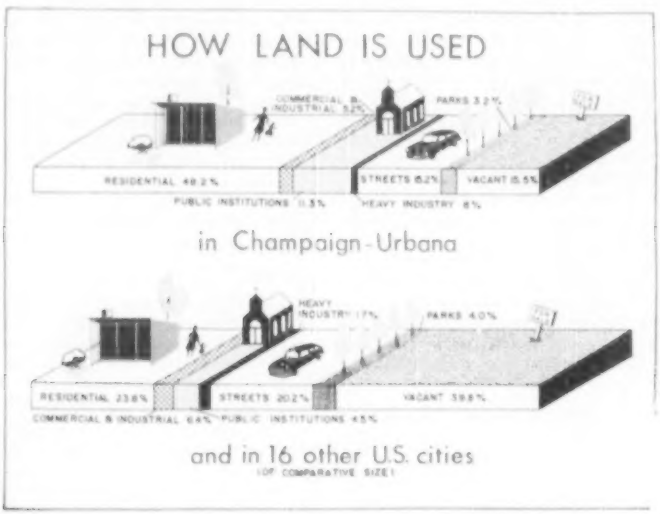
Each article was illustrated by a map, graph, or drawing especially prepared for newspaper publication—simplified and dressed-up versions of the technical working maps used by the professional planners.

As the planning activities moved from the research phase into the preliminary proposal stage, the advisory committee, the newspaper editors, and the plan-office staff prepared an 8-page newspaper section devoted entirely to discussion of the Master Plan recommendations, a summing-up of work to date.

In addition to detailed illustrated articles on residential and commercial growth, blighted areas, parking needs, etc., this supplement section contained letters from citizens, statements from the mayors of the two towns, from the President of the University of Illinois, and from the County Board of Supervisors, excerpts from the winning entries in a contest on "what Champaign-Urbana needed most to become a better community" (31% of the entries were concerned with traffic and transportation problems), and a question-and-answer column between a "skeptical citizen" and the planner.

A number of merchants in the community were solicited by members of the citizen's committee to contribute advertising space so that the newspapers would "break even" on the expense of running off the extra section. The ad-space was mainly devoted to reproduction of large-scale maps and charts, as a good-will gesture and as a means of conserving valuable editorial space. An automobile dealer paid for the half page in which a road map of the proposed expressway and street system was shown; the Real Estate Board contributed the space for a diagrammatic explanation of neighborhood planning as it could be done in actual areas of the community; a department store signed for the space used for a map-and-cartoon plan of a proposed lake and recreational area; a message on the value of community planning in terms of financial saving was underwritten by the banks.

The local businessmen's awareness of the need for thorough understanding of the community plan was evidenced by the fact that *every* merchant and firm




One of the charts published by the newspapers in Champaign-Urbana, Ill.

approached signed for space, and the entire solicitation took less than half a day.

This presentation of the community-plan proposals was in no sense a final report. It was, rather, a progress report, for it was published at a time when the recommendations were being formulated. Those who had not previously participated in drawing up the various features of the plan through one of the numerous citizen advisory committees were strongly urged to study the proposals and express their ideas, suggestions, or objections.

### Effective Material Needed

Newspapers can, indeed, be the planners' best friend—but the assistance must be mutual. Editors and reporters are hard pressed for both time and space; they will assist with an effective publicity job only when they are supplied with effective material—good illustrations and well-written, pointed articles based on familiarity with both community planning problems and newspaper editorial demands.

Planning is a day-to-day activity, and information about it should not be limited to occasional handsome reports or four-color brochures. A continuous series of newspaper articles over an extended period of time proved to be an effective and economical means of reaching *every* reader *often*.

It is too early to evaluate fully this phase of the publicity program. But such actions as have been taken to date—the relocation of several proposed new schools in accordance with community plan recommendations, acquisition of municipal off-street parking areas, revision of zoning ordinances, and more official supervision of the planning and design of new subdivisions indicate aroused citizen interest and support of planning proposals, although the complete plan report has not yet been submitted.

## *Syracuse Considers Colored Salt and Abrasive For Ice-Control Work*

COLORED salt and abrasive are being considered in Syracuse, N. Y., as a winter safety measure by Frank F. Harmon, Commissioner of Public Works.

On main thoroughfares, the city uses large automatic sanders, but on the stop streets, the intersecting streets, and other intersections and hills, the city uses hand methods of sanding. The Commissioner recognizes the danger of applying car brakes until the car is at a point where the tires will take hold. The color will let the driver know where that point is.

# Postcard Water Billing Is a Big Improvement

By FRED E. HAGIE
*City Treasurer*
*Grand Junction, Colo.*

THE 4,000 water accounts of Grand Junction, Colo., are billed quarterly on a zone basis of three zones. Each month one-third of the city is billed. We use postcard bills.

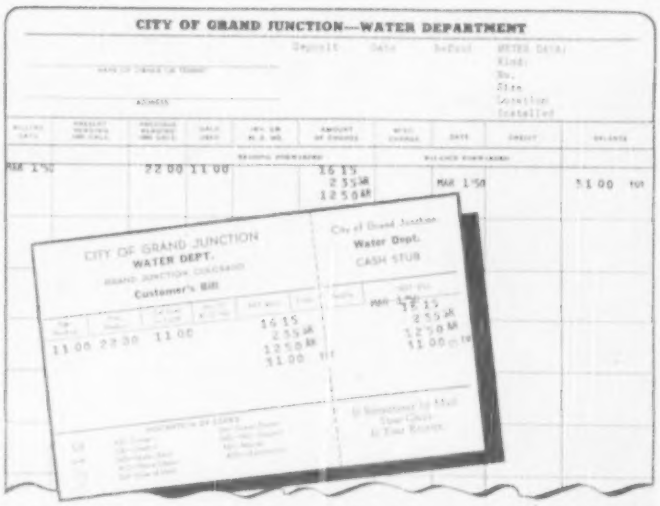
In 1947 we bought a Burroughs billing machine—one of the first of its type—with registers to keep accumulative totals of water, sewer rental, total gallons billed and amount of total billing. The machine prints the bill, ledger sheet, and carbon-proof sheet in one operation.

Water bills paid are receipted in our Burroughs validating machine. It receipts both the customer's bill and the retained stub with a date, identifying initial and number as well as the amount paid. The amount is also recorded on an audit tape. The machine has two registers, and in our case, two attached drawers. In this way, each of two persons receiving collections has his own cash drawer. At the end of the day, the total of one register is added in the other register and must balance against the treasurer's receipts issued during the day.

To simplify auditing and bookkeeping procedures, we make one treasurer's-receipts summation at the end of the day for the total water and sewer collections. It is made in triplicate. One copy is for the customer, one for the bookkeeper, along with water-bill stubs, and one is retained in the receipt book for auditing purposes. This enables the bookkeeping department to verify our collections and his charges by posting credits from our receipts. Using one-time carbons between our receipts save the time of inserting carbons.

### Money and Time Saved

In the past, bills were posted separately from the ledger sheets. They were stuffed in three-cent envelopes and mailed. A three-cent stamped window envelope was required to return the paid receipt to the customer who mailed in his payment. We now validate the reverse side of the check in the machine to obtain the identifying number. We save around $450 per year on postage and about fifty days' billing and posting a year at about $10 per day. Besides this, we eliminate the headaches that resulted from billing errors caused by duplicate posting, receipting wrong bills, and stuffing envelopes. As you can see, our billing and receipting procedures tie together very closely.




Customers' ledger sheet and postcard bill, with cashier's stub filled in by a Burroughs utility machine. Bill will show receipted amount when paid.

# Tin-Can Salvage from Atlanta's Incinerator

## *Controlled temperature, clinker-free residue necessary*

By C. W. MAYSON
*Incinerator Superintendent*
*Atlanta, Ga.*

THE recovery of tin cans for the City of Atlanta dates back to 1937. At that time the incinerators were manually stoked, and burned mixed refuse with no separation of any kind. Tin cans were removed and sold, but the revenue received was very small compared to the amount received today. The cans, ashes, and clinkers were all removed from under the grates by means of small cars operating on tracks. The cars were pulled up an incline and dumped into a perforated rotating screen in an attempt to separate the ashes and clinkers from the tin cans. This proved very unsatisfactory because the clinkers were usually large and were also separated with the tin cans. Since the large clinkers and cans were separated together, a magnetic separator was installed in an attempt to separate the tin cans from the clinkers. As very often the large clinkers contained metal or tin cans, the separator was not entirely satisfactory.

Since at that time the tin-can recovery and processing equipment required an unreasonable amount of equipment and manpower, there is some doubt as to whether it was worth the effort and expense of operation as compared with the revenue received. It did, however, prove beyond any doubt that tin-can recovery had great possibilities with the correct type of incinerator and can recovery and processing equipment. This experience proved beneficial in connection with the type of new incinerator and equipment needed.

For successful tin-can recovery it is important to have an incinerator that operates more or less free from large clinkers with a flexible method of temperature control. The old-style Atlanta incinerator did not lend itself to either of these. Temperature control is essen-

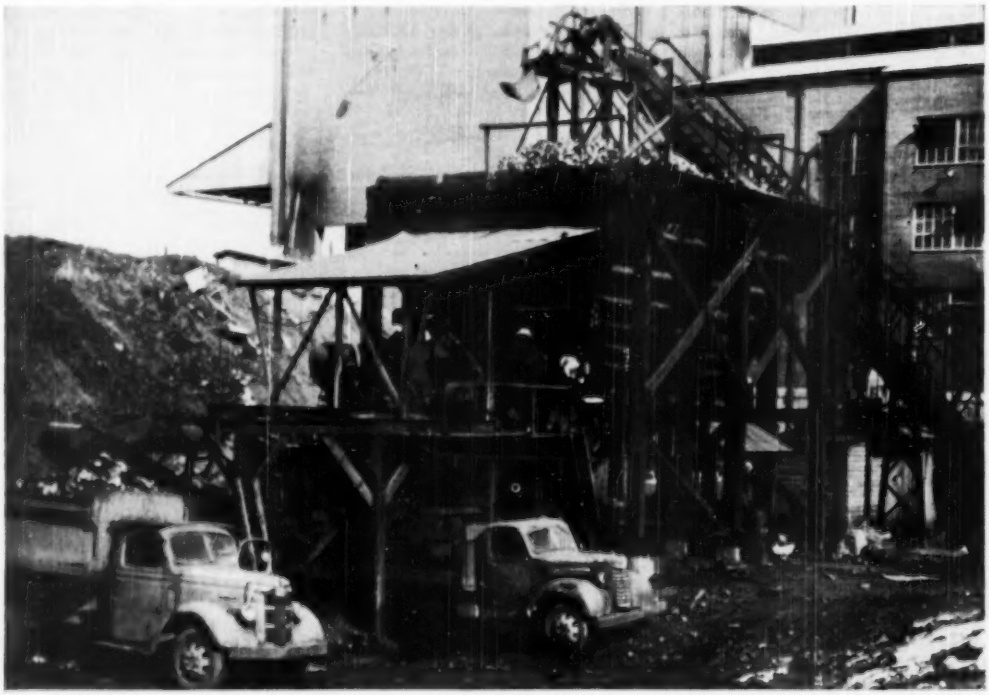
TIN CAN REVENUE DATA

*City of Atlanta Incinerator*

| *Year* | *Tons Refuse Burned* | *Tons Cans Sold* * | *Net Revenue Actually Received* |
|---|---|---|---|
| 1948 ..... | 110,211 | 5,205 | $87,129.00 |
| 1949 ..... | 123,869 | 4,882** | $67,884.06** |

* Because tin cans are normally sold on a long-ton basis, this figure is in long tons, or 2,240 lbs. per ton.

** This figure is actually for only 11 months, as the can-processing equipment was out of service for one month. In addition to this figure for tin cans, approximately 550 tons of miscellaneous scrap iron were sold between April 11, 1949, and December 31, 1949.



**This tin-can salvage operation means money in the bank for Atlanta.**

tial because if the temperature is too high, the cans are burned up, and if too low, the tin is not removed from the cans. Our experience is that cans are hard to market unless the tin has been completely removed from the cans and the cans are of a uniform quality.

As the City of Atlanta grew, it became necessary to build a larger incinerator. All American incinerators were investigated and studied, and none at that time seemed to fulfill all the rigid requirements for steam generation and can recovery. Failing to find a satisfactory American incinerator, the study was continued in Europe. There a method was found that had proven most satisfactory in its numerous installations in Denmark, England, Sweden, and France. These incinerators were developed in Denmark under the direction of A/S Volund of Copenhagen. As this country did not contain any Volund installations, fundamental principles and operating data were obtained and studied. A careful study indicated that the Volund design, an entirely new type of incinerator for this country, was the best available for Atlanta and for efficient steam production and can recovery.

### Incinerator Has New Features

In September 1941, Atlanta's new incinerator was put into operation. The new incinerator contained many new features, such as drying grates, ignition grates, rotary kiln, clinker- and ash-handling systems, etc. The most outstanding feature for tin-can recovery was the very flexible method of temperature control and the complete burning of all refuse. As the new incinerators are of the continuously operated type, the refuse is introduced into the unit constantly, entirely eliminating any entrance of unwanted excess air. Air is admitted automatically and in the proper volume to insure proper combustion and constant and desired temperatures. This produces uniform and controlled steam production, which is an important source of revenue for Atlanta. The continuous and controlled operation also prevented the forming of large clinkers, thus making the separation of tin cans a comparatively simple and inexpensive operation as well as producing a more uniform product.

After a short period of observation and study, the new incinerator proved that beyond any doubt this was an ideal plant for tin-can recovery. As for steam production, it had easily proved its value. Installation of recovery and processing equipment was based on previous experience with the old incinerator.

The clinkers, ashes, and tin cans are discharged from the dumping zone of the incinerator into a slow-moving conveyor that is submerged in water to arrest the dust and quench completely the residue on its way outside the building. It is at this point that tin cans are separated. From the conveyor the residue is discharged onto a rotary screen that separates the cans from the residue. The cans are then conveyed to a collection bin, from which they are rolled flat and shipped. The residue is loaded on trucks and is used for a sub-base for streets, for surfacing parking lots, and for filling holes.

Tin-can recovery for Atlanta now runs between 4% and 5% by weight of the refuse as received. In addition to the cans, there is about 1% of miscellaneous metals. The cans are a uniform product and must not be confused with cans from an ordinary incinerator. The cans are uniformly burned entirely free of tin; what is left is a piece of reannealed mild steel. Atlanta sells its cans to a silican alloy manufacturer, who uses the cans for making ferro silican alloys and pig iron.

Until now the City of Atlanta has only recovered tin cans, but a study has been made and it now looks profitable to recover all metal. As Atlanta is now in the process of doubling the capacity of the present incinerator (700 tons of mixed refuse per day) careful consideration is now being given for recovery of all metal.

The City of Atlanta has kept very close and accurate records on the operation of the incinerator. Some of this information will be of interest and is shown on the preceding page in table form.

# Technical Aid for Tennessee Cities

By R. G. CROSSNO, *Mayor*
*Norris, Tenn.*

WHEN the Tennessee Valley Authority sold the Town of Norris to a group of private real-estate investors in 1948, the public services provided by TVA for this community of 1,100 residents came to an abrupt end. As individual residents, including many from Oak Ridge, began to purchase their homes from the real-estate syndicate, the need for an organized municipality to provide essential governmental and community services became immediately apparent. Consequently, following the careful drafting of a charter calculated to fit the particular needs of Norris, the General Assembly of Tennessee granted it in 1949, and Norris became a regular Tennessee municipality for the first time since its establishment by the TVA in 1935.

Fortunately, the same session of the Legislature provided for the establishment of the Municipal Technical Advisory Service to provide assistance to city officials upon request. This new agency, which was activated on July 1, 1949, is located within the University of Tennessee at Knoxville, and is operated in cooperation with the Tennessee Municipal League. The MTAS program is paid for out of a portion of the cities' share of the state sales tax, plus a matching amount appropriated from the state's General Fund.

The Municipal Technical Advisory Service was a real "life-saver" to Norris, which was immediately confronted with all the problems of a going municipality, and a few additional ones because of its unique origin and method of disposition.

The MTAS staff proved especially helpful during this initial period of getting organized and establishing necessary services. Gerald W. Shaw, Executive Director of MTAS, as a member of the Government Research staff of the TVA, was familiar with the details of the Norris disposition and related problems, and had a sound background of municipal experience.

The MTAS did not attempt to assume any of the responsibilities of the City Council, but emphasized that it was only suggesting possible courses of action or alternative methods of solving a particular problem. As a general policy, the Service never volunteers assistance, but only makes its services available when requested.

Assistance to Norris was rendered on budgeting, taxes, assessment, regulation of utilities, franchises, traffic, dog licensing, cemeteries and planning. Model ordinances, sample codes, and other reference materials supplied by MTAS proved especially helpful. The Service has also given advice on problems which involve contact with some agency of the state or federal government, and has saved much time and effort for Norris officials in this way.

The MTAS also assists in preparing for publication the Tennessee Municipal League's new monthly magazine, *Tennessee Town and City*. Each issue contains a Technical Supplement, compiled by MTAS, which gives officials of small cities like Norris a factual presentation of problems of current interest.

Many other Tennessee municipalities are beginning to use the Municipal Technical Advisory Service for assistance in solving their problems. Others will undoubtedly avail themselves of the service when they become familiar with it and realize its value.

# Better Water for Hays, Kansas

**New well field found 11 miles from city —spillway treatment plant being completed**

**Twelve miles of pipe connect the Smoky Hill wellfield with the city.**

By V. A. BASGALL
*City Manager*
*Hays, Kans.*

HAYS, Kans., is catching its breath again after a finish fight with a tough, persistent, dangerous problem that is apparently characteristic of cities in these parts ever since the war ended—where to obtain enough water to meet the increased demand that nobody had any idea would occur. It was a mean problem, but Hays has overcome many like it in its 79 years since the days of the pioneers. The water resources of our city affect the entire trade territory of 175,000 persons, and aggravates the "growing pains" that our city has constantly been experiencing.

All wells constructed prior to 1937 were located in a relatively small area within the city, and as a result the water table was constantly lowered as the demand increased. This made it necessary to extend the supply area immediately outside the city, but by 1945 this additional supply could not meet the demand, and it was necessary to seek a new source at some location other than the immediate vicinity of Hays.

This was a situation that of course had to be overcome.

The people of Hays backed us in our corrective steps by authorizing a $750,000 bond issue dedicated to water-supply purposes. We needed two years to find a new source of water supply. Our search took us 11 miles out of the city, to uncover a well field with water enough for our needs but harder than we liked. To correct this we are completing a new softening plant, along with a 12-mile cast-iron pipeline, two booster stations, well houses, and chlorinating equipment.

Installations of the 12-inch pipeline completed last summer was in a 24-inch ditch. The pipe was laid on a flat bottom with dug bell holes and a four-foot cover. A Roll-On-Rubber Ring pipe joint was used and a single crew consisting of all local labor laid as much as 2,500 feet a day. Over 3,700 joints were assembled in the line without a single failure. The backfill was hand-tamped before being covered by a bulldozer. We used American Cast Iron Pipe Company Mono-Cast pipe for the new line.

The pipeline taps a groundwater supply fed by the Smoky Hill River. The annual discharge of the river varies from 8,000,000,000 gallons and 35,000,000,000 gallons with an average discharge of about 20,000,000,000 gallons per year.

**The pipe was laid with a consistent frost-proof cover of four feet.**

A portion of the surface flow of the Smoky Hill River is constantly seeping into the ground to recharge the groundwater storage which constitutes the underflow of the valley. Most of the groundwater that seeps down the side-slopes of the valley also recharges the underflow. The total watershed between divides, which contribute to both the surface flow and the groundwater of the Smoky Hill Valley, is about 17 miles wide due south of Hays; 10 miles to the westward the watershed widens to a total of 24 miles.

## Test-Hole Drilling

In order to locate our well field in this area, approximately 100 test holes were drilled along the Smoky Hill River for a length of 6 miles in determining the best location. The average depth of the tests and of the best sand and gravel formations was about 55 feet. The most promising test holes had about 30 feet of water-bearing sand and gravel generally intermixed with broken shale, limestone, and caliche. The results of these tests show that there were large deposits of sand and gravel distributed over a wide area, and the depth and gradation of the water-bearing deposits indicated the possible development of large-capacity wells. Also the large drainage area contributing to the underflow will insure adequate recharging of the ground water reservoir even during a series of dry years.

A test well was also drilled, including a sixteen-inch casing and gravel packed wall to determine the actual pumping capacity of the area. This well was pumped continuously for 10 days with capacity readings and draw-down

levels taken every hour. The best pumping range was determined at 720 gallons per minute.

Following the testing period, locations were staked for five wells to augment the City of Hays water supply. The well field has four wells with Pomona turbine-type pumps. Two are rated at 500 gpm and two at 250 gpm.

All water is chlorinated at the well field by Wallace & Tiernan automatic visible vacuum chlorination-control equipment of 150-pound capacity per 24 hours, with high-pressure arrangement control of equipment by electric additive rate controller and vacuum controller. This equipment is used for the control of micro-slime organisms in the pipeline and in the assistance of iron manganese removal. This provides an accurate treatment rate regardless of the number of pumps or the sequence in which they are operated. A telephone circuit with radio relays is used to operate the wells and booster station from the softening plant.

### Rapid Gravity-Flow Filters

The high iron and manganese content in the Smoky Hill water will require a treatment plant. Also, since the hardness of the water is about 430 ppm, it is advisable that it should be softened before it is distributed to the city for domestic use.

After considerable study, it was decided that the most advisable method of softening was a lime-soda plant with upward-flow basins. The equipment to be used in the upward-flow basin is a Hydro-Treater, manufactured by the Dorr Company.

The first unit of the plant to receive the water from the wells will be the aerator. The water will be aerated to remove the carbon dioxide gas and to cause the oxidation and precipitation of the iron and manganese in the water. The aerator will consist of a concrete box, in which are arranged a series of slats or trays over which the raw water splashes. A blower will provide forced draft upward through the falling water.

The water from the aerator will flow to the center compartment of the upward-flow basin. A metal cone will be supported inside the basin, which will separate the flocculating area, comprising the center portion of the tank, from the settling area, which is the outer portion. The raw water and chemicals are added to the central portion, where mechanical stirring provides proper flocculation. The stirring action will cause a heavy slurry to form in the lower portion of the basin as the water-softening process continues, and the softened water will be circulated through this slurry or will be permitted to flow upward through the sludge blanket and drawn off over a weir around the periphery of the basin. Sludge draw-off lines, equipped with diaphragm valves and time switches, draw off the precipitated sludge at predetermined intervals. Sampling lines and other necessary appurtenances are included with this unit.

After the treated water passes through the upward-flow basin, it flows to the recarbonation chamber. A pipe grid is located in the bottom of the chamber, and carbon dioxide gas is bubbled up through the treated water. The carbon dioxide machine consists of a gas burner and a small compressor which forces the gas through the grid system.

### Treatment Needed

The softened water from the recarbonation basin flows directly to the filters, which are of the rapid gravity-flow type and consist of concrete tanks filled with about 3 feet of filter sand and graded gravel. Under the filtering media is the Leopold system of underdrains that collect the water which has been filtered, and, when backwashing of the filter is required, will distribute the backwash uniformly over the entire area of each filter. The filters will all be operated by Ludlow hydraulic valves.

The superstructure of the filter building is of concrete buff brick and limestone construction. The building will be three stories high. The ground floor includes the office and laboratory, filters, settling basins, and high-service pumps. The second floor will consist of locker rooms, a chlorination room, and feed machines, and will provide space for operation of the filters and the Hydro-Treater. The top floor will be for chemical storage, from which chemical feed machines will be filled, and an incinerator for disposal of empty chemical bags. An elevator is used to take the chemicals to the top floor and is located adjacent to the loading docks.

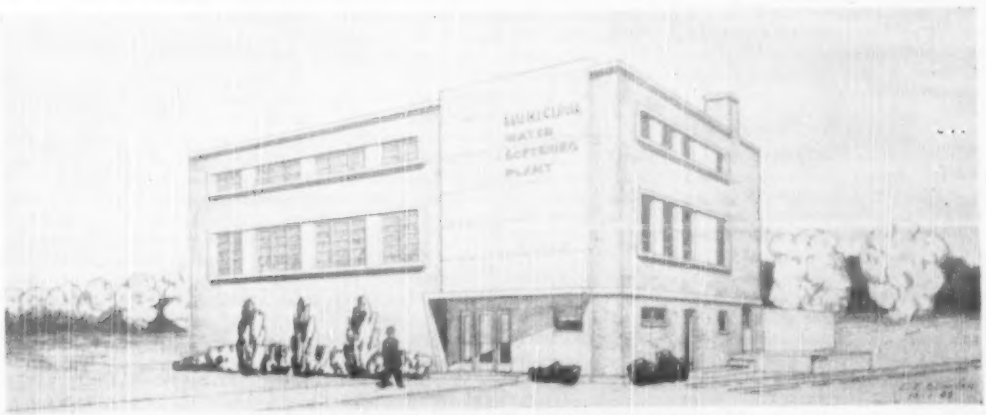
The capacity of the plant is 3 mgd. Two high-service pumps with a capacity of 900 gpm each, and one pump of 1,500 gpm, will be in the plant.

A new 14-inch high-service line from the plant to the distribution system has been constructed.

Chlorine will be applied to all water at the well field, and again when the effluent is pumped into the distribution system or reservoir.

The advantages of soft water are numerous, although not all of them are readily apparent. These advantages may be divided into two general classes: those whose value can be estimated or measured in dollars and cents, and those which increase the ease of operation or add to the comforts of living. Soap savings, reduced plumbing and fuel costs, increased life of wash goods and industrial benefits are a few of the advantages of soft water.

Douglas Construction Company, Topeka, Kans., is the contractor and Wilson & Company, Engineers, Salina, Kans., furnished engineers.



**How the new Hays softening plant will look when completed.**

# Municipal Gardens and Flowers

By ERNA MATHYS
*Librarian, Free Public Library*
*Arcadia, Wis.*

**PART II**

**(Part I of this article appeared in *THE AMERICAN CITY for May 1950*)**

CLOSELY RELATED to the municipal garden idea is the practice of having municipal flowers. Every town isn't fortunate enough to inherit a garden, nor has every town the funds necessary to maintain one. But every town, no matter how small, can adopt some flower for its very own. It may be a flowering shrub, a bulb, an annual, or a perennial. Everyone is familiar with Portland, Ore., the Rose City, and with Holland, Mich., the Tulip City. Everyone has heard of or seen the Parade of Roses held in Portland, the Tournament of Roses held in Pasadena each New Year's Day, and the Tulip Festival held in Holland. These are the better-known examples of city flowers, but they are by no means the only ones, nor does the adoption of a city flower mean that it must be accompanied by a parade or festival.

### Choosing the Flower

The support of such a flower may be sponsored by a city government itself or by some such group as a garden club or by a combination of the two. Often the selection results from a happy thought. This was the case in Holland, Mich., where a biology teacher was asked to give a talk on civic improvement. She suggested that Holland "cash in" on its Dutch heritage and make itself the Tulip City. The idea was accepted with enthusiasm and in 1929 Holland held its first Tulip Festival. Tulips are grown by the millions, a nine-day festival is held, and Holland is given an individuality it could not otherwise have had.

To be selected as an official flower, the flower need not be anything rare or difficult to grow. In fact, it should be quite the contrary. The ideal is a flower so inexpensive, so adaptable to various conditions, so easily grown that everyone may have as many as he wishes. It may be grown on home grounds, in city parks, along curbs, in vacant lots, at city approaches; it should be planted anywhere and everywhere so abundantly that the whole city becomes one splash of color, one vast garden. It is evident the flower must be suited to the growing conditions of the city for which it is chosen. The rose is ideal for Portland, Ore., but the ordinary zinnia is far better suited to Hammond, Ind., which in 1936 decided to become the Zinnia City. The zinnia is rugged enough to withstand conditions found in a great industrial center; it is inexpensive and so easily grown that even the poorest workman can have his zinnia garden.

### Some Outstanding Examples

As with municipal gardens, so with municipal flowers—only a few examples will be cited. They will show possibilities for pleasure that can easily be had if a city decides to sponsor the growing of some certain flower. The municipal-flower idea is one that should especially appeal to the small city, for none is too small to support this means for city beautification.

One of the outstanding examples is Nashville, Tenn., which in 1930 began the city-wide growing of iris. For the capital city this was a particularly appropriate choice, because the iris is also the state flower of Tennessee. It is claimed that Nashville has the largest tract of iris to be found anywhere in the world, and when the Iris Festival is held in May truckloads of roots are given away. For many years, Dallas, Texas, prided itself on being the Crepe Myrtle and Iris City. Now, interest has shifted and everyone is being urged to plant redbuds. Redbuds, too, are being planted by the tens of thousands in Shreveport, La. In Wichita, Kans., when a city forester was hired in 1920 to replace the undesirable trees with better varieties, the children, as their part of the program, planted 40,000 redbuds. In 1940 the Girl Scouts undertook to continue the project.

In Ocala, Fla., the Garden Club boosted the growing of petunias until Ocala was known as the Petunia City. Thousands of petunia plants were set out and thousands of blossoms given away when a Petunia Festival was held in April or May. Now that the petunia has become established, the club is introducing the azalea to Ocala.

When the centennial of Stephen M. Babcock's birth was observed in 1943, his home city of Madison, Wis., sponsored a hollyhock planting campaign because the hollyhock was Professor Babcock's favorite flower. Seeds were distributed from plants grown in his own garden; they were planted everywhere in Madison and anywhere in the state where people wished to pay tribute to the great scientist.

### Tulip Time in Pella

In May, Pella, Iowa, holds its annual Tulip Time, a festival to commemorate the arrival of Dutch settlers in 1847. They had fled Holland because of economic and religious difficulties, came to America and the Mississippi, went by covered wagon until they came to the fertile plains of Marion County, Iowa. There they were welcomed by a small group of American settlers; they liked the spot so well and it seemed such a haven after their long journey that they called it Pella: the City of Refuge. In the course of time these people made their little community more and more like a little bit of their homeland; they built a model of a typical Dutch village, constructed an exact replica of

a Dutch windmill, had their Koffe Klets just as in Holland, their klompen that the Dutch people wear—and planted thousands and thousands of tulips. Now the tulip planting is more interesting than ever before because in the fall of 1946 the Holland Bulb Growers' Association sent 25,000 bulbs of unusual varieties to show appreciation for the thousands of relief packages the people of Pella had sent to the mother country.

The festival in Pella lasts three days; it includes an elaborate parade, the crowning of the Tulip Queen, and a rendition each evening of Herbert's "Red Mill," with authentic Dutch dances and, for the first time, authentic Dutch costumes.

Many other cities have adopted similar planting programs. Van Wert, Ohio, is known for its peonies; it has an annual Peony Festival with a Queen. Clarinda, Iowa, is known as Lilac Town because thousands of lilacs line the entrances to the city; Horicon, Wis., has recently chosen the iris as especially appropriate to its marshy location; Galveston, Texas, with its many kinds of oleanders, is known as the Oleander City.

To select an official flower does not mean that only this one is planted. A Tulip City will follow its tulips with some ground cover that offers beauty after the tulips are done; a Lilac City will interplant its lilacs with other shrubs that will prolong the blooming season.

In 1944, Kenosha, Wis., decided to make a memorial planting in its Lake Front Stadium. Lilacs of 33 varieties were planted in a program to be spread over a period of years. Some 14 varieties of other flowering shrubs, such as the flowering almond and flowering crab, were to be planted among the lilacs to provide continuous beauty and interest.

Cape Girardeau, Mo., has begun an elaborate rose-planting program. In a ten-year period more than 15,000 roses have been planted at the approaches to the city; it is said this is only a beginning. Roses are arranged by colors in beds of from 20 to 500 plants and are interplanted with other shrubs such as spirea, redbud, and honeysuckle, which will bloom when the roses are not at their best.

One might write a book on what cities are doing to provide flowers, gardens, and parks for their people. But no book could possibly tell all the benefits such projects can bestow. Many an individual will find some special meaning in a planting, some favorite flower, some one nook where he likes to loiter. It is well that such beauty spots are becoming more and more common; they provide an escape from the stern realities of present-day life; they are real "safety valves" in a world distraught by political and economic worries and incertitudes.

# The Superintendent of Schools and the City Manager

By DONALD W. DUNNAN
*Superintendent of Schools*
*Franklin, N. H.*

CITY management is meeting with rapidly growing favor as a means of promoting efficient municipal government. It is interesting to note that the obstacles which city management has to overcome as it gains increasingly general acceptance are comparable to those that harassed the superintendent of schools during the years in which the pattern for the superintendency was being established.

The school superintendent has learned much about methods of improving the working relationship with boards of selectmen, mayors, and city councils, and other administrative groups with whom the superintendent has had to deal. Little attention has been given, however, to the problem of developing an effective working relationship between the city manager and the superintendent. Inherent in this relationship is the possibility and the probability of conflict.

## "Battle of the Budgets"

The school superintendent is concerned with developing an educationally efficient school system. In order to achieve this end, it is generally recognized that consideration must be given to the level of expenditure. Most superintendents are constantly fighting the "battle of the budget" to the end that improved services and better educational opportunity may be available for the boys and girls within the school system for which they are responsible. While the city manager is concerned with improving municipal services, he is also concerned with keeping the tax rate down. The city manager often assumes that the improved efficiency he is able to bring about in the police, fire, highway, and water departments, could likewise be achieved in the school department if he were given authority to administer the affairs of the schools in a "businesslike" fashion. Since the schools take a good percentage of the tax dollar, it is inevitable that the city manager should wish to concern himself with the business affairs of the school department.

However, it should be remembered that the office of the superintendent of schools in this country has been developed slowly and with some care over the last hundred years. A good measure of public support is solidly behind present school-administration practices in most communities. When proposals are made that will inevitably affect the educational program of the schools, the people are apt to take a long close look at the situation before sanctioning any change.

A recent survey in the New England area has shown that school superintendents have a broad background in training and experience for the jobs that they are doing. The average school superintendent has had six years of formal training beyond high school. The typical city manager has had four years of training. The average superintendent has had 21 years of service in the field of public education and has served eight years as a superintendent. The New England city manager, on the average, has had 10 years of experience in the field of municipal government and management and has had eight years of experience as a manager.

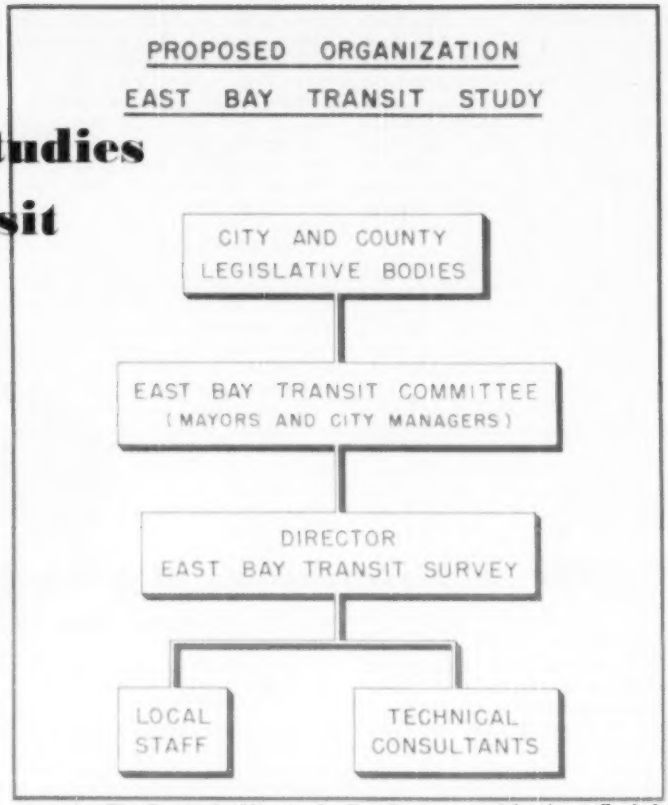
## Suggestions for Cooperation

The school superintendent would find himself in a position where his business management of the schools would be less open to challenge from the city manager if he invited the city manager to consider with him the possibilities for more efficient operation within the school system. Very possibly the city manager and the superintendent might find that there were a number of areas in which purchasing was duplicated and where combining the needs of the schools with those of the rest of the municipality would be advantageous.

The loosely drawn charters under which many city managers are operating give rise to much contention in regard to the extent of the city manager's authority. It is important that city managers be careful not to impinge upon the prerogatives of the superintendent and school board, but equally important that the school board and superintendent enlist the cooperation of city managers in every way that may contribute to the more efficient operation of the schools.

# A Region Studies Rapid Transit

By JOHN G. MARR
*City Planning Engineer*
*Oakland, Calif.*




**A report, *The Transit Problem in the East Bay*, prepared by the staff of the Oakland City Planning Commission for Mayors and Managers of the East Bay cities, proposes a regional transit survey under the organization shown above.**

THE fundamental problem considered in this report is that of transporting people. How can this be done most efficiently, conveniently, and economically within the East Bay metropolitan area and between the East Bay and San Francisco?

A large and steadily increasing proportion of the East Bay population travels by automobile; a smaller and consistently decreasing proportion travels by mass transportation. Apparently, the public is convinced the automobile offers a more convenient means of getting from one place to another than the transit system does. Yet, the more people use the automobile, the less effective it becomes. Streets, highways, freeways, and bridges become more congested, and parking spaces are at a premium. New traffic lanes and parking areas have been provided at a heavy cost to city, county, state, and nation, and these facilities have only attracted more motor traffic.

Shall we build more and more facilities for automobiles as the traffic volume grows? Is this the most effective way to move people within a metropolitan area? Or should mass transit play a more important role? If transit offers a sound, economical solution for the East Bay area, how can people be attracted to use it in preference to their automobiles?

## What We Have

Public transportation in the East Bay area is supplied by a single operating company, Key System Transit Lines, and its parent company, Railway Equipment and Realty Company, Ltd. A controlling interest in the latter's common stock is, in turn, owned by National City Lines, a holding company which owns and operates transit properties in 40 cities located in 16 states throughout the country.

The operations of Key System are greatly influenced by the geographic peculiarities of the East Bay. The area of service stretches in a narrow strip over 25 miles long and only 2 to 4 miles wide, hemmed in between the Bay and the Contra Costa hills. Instead of one city to serve, there are eleven. In addition to serving the East Bay, trans-bay service to San Francisco must be provided. Each day Key System carries approximately 50,000 trans-bay commuters and shoppers to downtown San Francisco. Of greater importance from the standpoint of passenger volume is transit movement into and out of Oakland central business district. The volume of patronage to and from the central districts of the other cities surrounding Oakland in itself constitutes a major transit operation.

The system comprises 5 trans-bay rail lines, 9 trans-bay bus routes, and 55 local bus routes. It includes 61 miles of rail trackage, 80 miles of trans-bay bus, and 370 miles of local bus routes. Service is supplied by 88 articulated train units and by 669 buses, of which 340 are new diesel and gasoline buses acquired since 1946. These vary in capacity from 41 to 44 seats. They accelerate and stop more rapidly than the obsolete streetcars they replaced, but they do not measure up to trolley coaches or the latest-model streetcars in this respect.

Recently Key System installed a more efficient kind of fare box in its buses and trains. The success or failure of the company's operations depends on how many coins the public drops into the till. More than 98% of the revenue is from passenger fares. In 1949 transit riders paid in $14,058,106, which, when supplemented by miscellaneous income, rose to $14,123,419. This sum was 16% below the peak 1945 revenue. However, the drop does not reflect the full loss of patronage suffered by Key System because fare raises have partially offset the 26% reduction in passenger volume.

High overhead costs for equipment, materials, and labor, together with falling revenues, have kept the company's net earnings low. Operating expenses ate up 80% of operating revenue in 1945 and 86% in 1947. In 1949 they exhausted 77% of the operating reve-

nue, leaving a scant $3,200,000 to cover depreciation, amortization, taxes, and profit.

In common with all other transit operators, Key System's annual payroll represents an extremely large proportion of its operating expenses. In 1949 wages and salaries totaled 68% of all overhead and 53% of gross revenue. By way of contrast, the 1945 payroll accounted for only 55% of overhead and 44% of gross revenue.

### Key System's Policy

In a statement of policy, made at the request of the staff of the Oakland City Planning Commission on December 28, 1949, the President of Key System stated: "With reference to the use of rail rapid transit in the East Bay area, we are firmly of the opinion that such an operation could not be justified either by private or public capital unless freeway rights-of-way extending from the bridgehead throughout the East Bay territory were made available. . . . Even the replacement or reconstruction of the present East Bay rail plant could not be accomplished within a fare structure that patrons would be either able or willing to pay."

Stressing the advantages of the motor coach, particularly the latest models, the statement points out that "the increasing development of the highway-freeway program lends itself to the speed and comfort of trackless vehicles which can be operated and extended far more efficiently and at substantially lower fares to encourage greater use."

It is plain that the directors of Key System put little stock in the possibilities of rapid transit. Evidently they are counting on the street-and-highway-development programs of the cities and the state to provide a long-range solution to the East Bay's transportation problem. Even if a technical study were to indicate that rapid transit is the only valid answer, it probably would be extremely difficult to interest Key System in investing in such a venture.

It might be possible to induce the company to go into rapid-transit operation if the necessary facilities were constructed at public expense. One of Key System's directors, Alfred J. Lundberg, has proposed that an East Bay rapid-transit system be constructed, financed by public funds, and turned over to Key for operation. He recommends that gasoline-tax revenues be used to build grade-separated rights-of-way and the fixed plant required for transit operations, together with terminals, stations, turnouts, approaches, and related facilities. The Lundberg plan also calls for public ownership of all equipment in excess of that required for off-peak operations. Leased to Key System, this equipment would be used only during rush hours.

To justify his proposal, Mr. Lundberg points out that the gas tax is levied to finance the construction of facilities for moving people, and that rapid transit is the most efficient way to accomplish this purpose. While his premises are valid, Mr. Lundberg's conclusion does not necessarily follow from them. Constructing the necessary plant at public expense and turning it over to Key System for operation is not the only way to secure rapid-transit service. Even if public ownership with private operation were approved in principle, steps should be taken to assure that the most efficient operating organization is given the job.

Key System has indicated that it would like to eliminate its unprofitable routes altogether. This is sound business policy, but it would have a disastrous effect on the East Bay cities. Thousands more automobiles would be added to the streams of traffic which now congest the streets and highways.

It appears that the problem of moving people within the metropolitan area might most effectively be solved through public ownership of transit. Involving a certain amount of subsidy, this may appear to be an undesirable step. But an effective transit system is the only permanent and relatively economical cure for the disease of traffic congestion. The cost of constructing rapid-transit facilities amounts to only a fraction of the cost of building a sufficient number of freeways and throughfares to carry an equivalent number of people in automobiles.

### But Which Public?

A public service such as transit may be provided either by a municipality or by a special-purpose authority or district. One of the principal disadvantages of municipal ownership is the fact that the need for transit service usually extends far beyond the limits of a single city. Obviously this is the case in the East Bay area, where the Key System now serves 11 cities and portions of two counties.

The use of the special-purpose district as an instrument to provide a public service on a regional scale is not without precedent in the East Bay. As early as 1923 the cities of Alameda, Albany, Berkeley, El Cerrito, Emeryville, Oakland, Piedmont, Richmond, and San Leandro organized the East Bay Municipal Utility District to supply themselves with water. Today in addition to these nine cities, the District includes six county water districts and ten unincorporated areas of Alameda and Contra Costa Counties, and it serves several private corporations and cities outside of the district under contract as well. Recently a special sewage-disposal district has been formed by the cities of Alameda, Albany, Berkeley, Emeryville, Oakland, and Piedmont, and the facilities needed to take care of this critical East Bay problem currently are under construction.

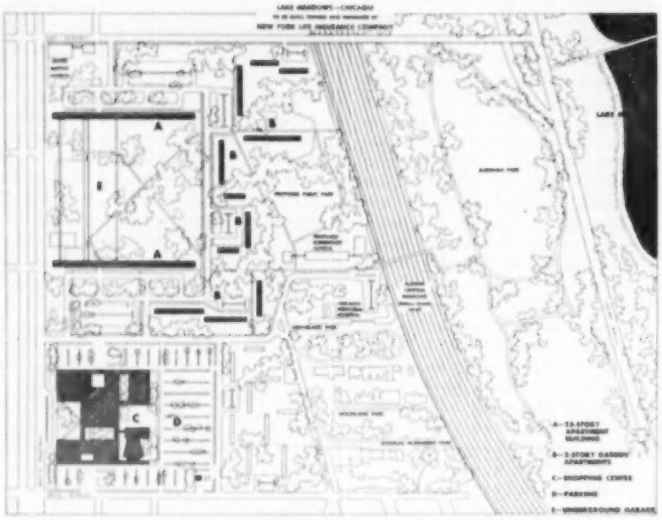
Would more and better transportation service be rendered the public at lower cost by a metropolitan transit district operating on a regional scale? Our report recommends that a committee representing the cities and counties of the East Bay find out.

### The Larger Problem

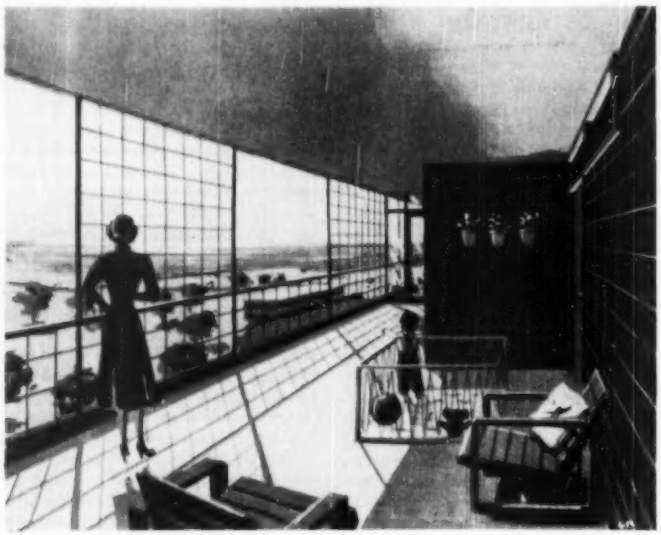
**The San Francisco Bay Area very definitely needs a backbone of modern high-speed grade-separated rail rapid transit and, authorities say, this service should be coordinated on both sides of the Bay. It should be a through service operating north, south, and east in the East Bay area, from around 40th and San Pablo in Oakland over the Bay Bridge to San Francisco. The San Francisco service should consist of a subway up Market Street with a branch west through the Twin Peaks Tunnel, northwest out Geary to the Presidio, and south out Mission and thence down the peninsula. This service should be a through service and should be coordinated with contemplated Bay Area freeway projects operating on a center mall of the freeways insofar as can be practically designed. A modern network of trolley coaches and buses should feed this system. To provide this, some set-up is necessary to make the right-of-way, for all practical purposes, a general-fund obligation as our streets and highways are.**

**It is, perhaps, not practical to underwrite the carrying charges on the right-of-way through the rapid-transit fare box. Nevertheless, the rapid-transit method of providing this very essential high-speed transportation is recommended as the most practical. It may, therefore, be necessary, as Mr. Marr suggests in this article, to set up a multiple-county authority to provide the rights-of-way for this very much needed rapid-transit system.**

# Unique "Redevelopment Project No. 1" Of Chicago Land Clearance Commission



This diagram shows how buildings in the project area will be placed and their relationship to other neighborhood improvements that are to be made.



A unique feature of the two 23-story buildings planned for Lake Meadows is an outside gallery, or "street" on every floor, from which all apartments will open. This arrangement will permit small children to play in the fresh air while their mothers watch from inside. In hot weather the family can sit outdoors and enjoy the magnificent lake view. Since there are no interior hallways, the usual problem of cooking odors in the public halls of an apartment building will be eliminated. Skidmore, Owings and Merrill are the architects.

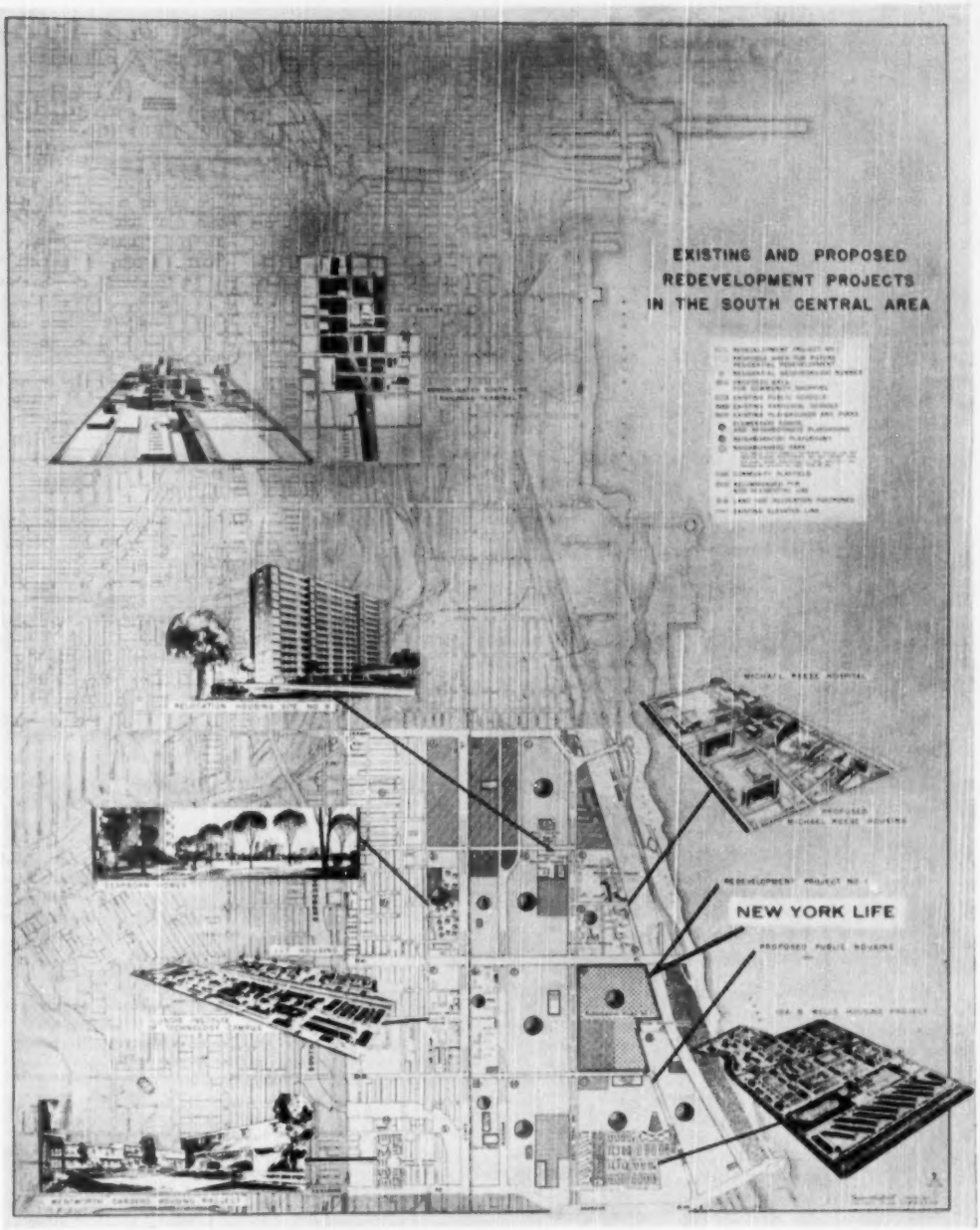
AN UNUSUAL opportunity for Chicago to set an outstanding example in the urban redevelopment field has been made possible by a bold and imaginative development proposed by the New York Life Insurance Company to house 1,400 families on a South Side site, to be made available by the Land Clearance Commission.

The location is part of a 100-acre site near Lake Michigan between East 31st to 35th Streets, which has been designated by the Land Clearance Commission as "Redevelopment Project No. 1." The proposed development includes two 23-story buildings of a strikingly modern design, 11 two-story garden apartment buildings, and a large shopping center. There would be 1,288 apartments ranging from two to six rooms each in the tall buildings and 116 duplex apartments of five and six rooms in the low buildings. Only about 8% of the residential area would be occupied by the buildings themselves, or about 33 families per acre.

Construction cost would be in excess of $15,000,000, according to Otto L. Nelson, Jr., vice-president of New York Life and head of its housing department. Actual rental charges will depend on these costs, but it is expected that the project will be within range of lower-medium-income groups. Announcement of the plans for the project was made on July 12, at a conference in Mayor Martin H. Kennelly's office.

### Local Negotiations

The City of Chicago had approached the New York Life and other insurance companies early in 1948 with the hope of finding private capital for undertaking construction of medium-rent housing in one of the city's blighted areas. A period of preliminary discussions followed, and on July 1, 1949, the New York Life and the Chicago Land Commission signed an agreement whereby the Commission would secure and clear the land and the insurance company would present its plan. The amount of money immediately available to the Commission is $25,706,159, of which $15,000,000 was furnished by the City of Chicago through a slum-clearance bond issue in 1947 and $10,706,159 were Illinois state grants furnished under 1947 statutes. The Land Clearance Commission also has a capital-grant reservation of $14,420,910 allocated to




**The variety of public and private projects scheduled for the comprehensive redevelopment of the South Central Area, including the Illinois Institute of Technology campus and housing improvements and the Michael Reese Hospital housing and other construction, are clearly shown in this drawing by the Chicago Plan Commission.**

it by the Division of Slum Clearance and Urban Redevelopment of the Housing and Home Finance Agency, under terms of the Housing Act of 1949.

After approval by the Commission and also by the State Housing Board, favorable action by the City Council is required before the big project can get under way. The area must be reclassified or rezoned to permit the height of the 23-story apartment buildings.

Under the proposal, residential land will be sold to the New York Life Company at 50 cents per square foot, and shopping and commercial-center land at $1.75 per square foot, or for a total sum of $1,651,666. The company will

pay full taxes, and also intends that in the selection of tenants there shall be no discrimination or segregation based upon race, creed, color, or national origin. First preference for occupancy of the dwelling units will be given to families now residing within the site.

The site plan, designed in accordance with modern planning principles for complete neighborhood living, shows an area of approximately 10 acres to be set aside for school, playground, and park facilities. There will also be a covered garage for 346 cars, with a direct entrance to the two multi-story structures, and open parking space for 548 cars. A large regional shopping center, with approximately 155,000 square feet of first-floor store space, will be built to serve residents of the project and of the surrounding area.

### Other Neighborhood Improvements

The site plan allows for the retention and subsequent development and expansion of the existing Olivet Baptist Church facilities at the corner of 31st Street and South Parkway, an area of 1.8 acres, and an area of 3.4 acres has been allocated by the site plan for future development and expansion of Chicago Memorial Hospital.

Among the features contemplated in the proposed project are buildings so placed that nearly every apartment will command a view of the lake. The garden apartments occupy an elevated grade which enhances their view. The two 23-story buildings will have, on the north side, an open gallery-type corridor at each floor—in effect, a "street-in-the-air" from which the apartments are entered. Glass-enclosed elevator vestibules will break these galleries into sections on each floor, with eight families to a section.

Individual apartments have been planned to allow the greatest possible variation in use of space by tenants. Modern laundry rooms will be provided at convenient locations. Private terraces and garden space are provided for all garden apartments, and the entire project will be landscaped with trees and shrubs. Architects are Skidmore, Owings and Merrill, of Chicago.

Other New York Life housing developments undertaken in the company's diversified housing program, are: Stanworth, Princeton, N. J., occupied in 1947, with 152 families on 18 acres; Fresh Meadows, Queens, Long Island, N. Y., occupied in 1949, an outstanding, completely integrated community for 3,000 families built on a former golf course; and Manhattan House, New York City, to be occupied in the fall of 1950, a luxurious 20-story building of unusual design, with 582 apartments.

# Manager Plan County Gets MFOA Award

THE effectiveness of the manager plan in county administration was given noteworthy recognition during the annual meeting of the Municipal Finance Officers Association in June at Montreal, Quebec, attended by more than 1,000 key fiscal officers from the U. S. and Canada. Montgomery County, Md., received the 1949 Achievement Award of the Association for outstanding improvements made in the fields of fiscal management, organization, and public and financial reporting.

The plaque award was presented to Alex K. Hancock, Director of the County's Department of Finance, and contained this inscription:

> "For outstanding improvements in fiscal management, organization, public and financial reporting, including the preparation and installation of a capital budget, the preparation of an assessor's manual, and the compilation and codification of local laws."

Montgomery County inaugurated a home-rule charter of government last year and sweeping innovations in government structure and organization were made. A council-manager form of government was adopted, and general administrative reorganization accomplished under the direction of County Manager Irving G. McNayr.

Robert E. Sanderson, City Comptroller, Lansing Mich., and Thor W. Bruce, Auditor, Board of Education, St. Louis, were recipients of the Louisville Awards, made annually to individuals by the Association. New Westminister, B. C. also received an achievement award for a successful reorganization of its financial administration.

Re-elected president of the MFOA was Lionel G. Ott, Commissioner of Finance of New Orleans. Commissioner Ott previously had served out the unexpired term of office of Joseph F. Clark, who became executive director of the Association earlier in the year. Lactance Roberge, Director of Finance, Montreal, was named vice-president. Newly elected members of the board of the Association are: Wilfred A. Greene, City Comptroller-treasurer, New Westminister, B. C.; Howard E. Munroe, Town Treasurer, Barrington, R. I., and A. A. Weinberg, Managing Actuary, Park Employees Annuity and Benefit Fund, Chicago, Ill.

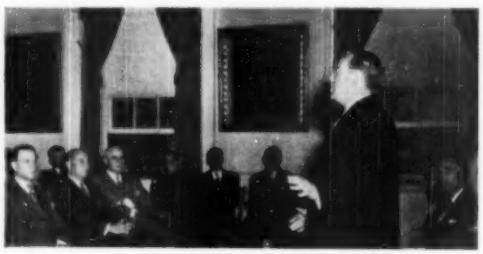
# New York City Trains Municipal Methods Analysts

THE idea of systematic improvement of municipal methods through analysis of objectives and procedures won an important foothold in June when, with the personal greetings of Mayor William O'Dwyer, 30 management analysts of city agencies in New York finished an especially designed advanced training program at the City College.

Representing an important development in furthering the use of modern methods, the program is believed to be the first organized on a regular college-graduate level for analysts in municipal or other government agencies. Thirteen large companies and well-known management consultant firms assisted by contributing the services of their experts as guest lecturers on successful new methods.

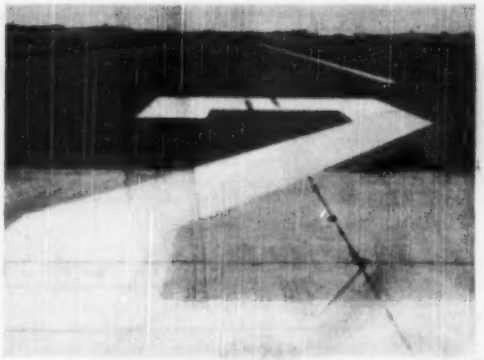
With this assistance, the analysts studied such subjects as techniques of management surveys, construction of charts for presenting reports, forms, uses of statistical methods in compiling and analyzing data, methods of measuring work performance, and principles and techniques in planning and coordinating production.

The program helps to carry out Mayor O'Dwyer's personal directive of 1947 instructing the city's Budget Bureau to set up a division of analysis to promote efficiency in the city's 109 departments and agencies. One of the first obstacles encountered by the Bureau was the absence of personnel qualified for such work. The training program consequently became a joint undertaking of the Division of Analysis and the Evening and Extension Division of the City College School of Business and Civic Administration.



**Mayor O'Dwyer addressing a group who completed City College's Advanced Training Program for Management Analysts.**

This is how the Phoenix, Ariz., municipal airport runway looked before Miss America came home last year . . .



. . . and this is how it looks today. Note the casein paint on the asphalt, and the oil paint on the concrete.

# How a Beauty Queen Improved an Airport

## . . . or, A "Welcome" Sign That Wouldn't Wear Off

By W. P. FULKERSON
*Airport Director*
*Phoenix, Ariz.*

ONE would never believe that when Miss America was named last year at Atlantic City, it would result in lowering the operating cost of Sky Harbor, the Phoenix municipal airport, but that is exactly what happened. Miss America for 1949 was Jacque Mercer, a Phoenix girl, and we are all mighty proud of her. And when the celebrating was over, we discovered to our surprise that we had a better way to make runway stripes on our asphalt surfaced runway.

Sky Harbor has two new 6,000-foot runways. We have been marking it with traffic stripes in the approved CAA manner with traffic-highway paint. But this never was satisfactory. New paint on asphaltic concrete seldom is good until the second painting, as most highway engineers know. To aggravate matters, we found that the oil-base paint dried more quickly than the seal coat on the asphaltic concrete, that it pulled the seal coat loose, and that the edges of the paint curled to make the stripes look ragged.

When Miss America came home from Atlantic City with her crown in her suitcase, the local Junior Chamber of Commerce painted "Welcome Jacque" on one of these runways with whitewash.

This welcome sign, we found to our surprise, was there to stay. We wound up by covering it over with a flat black paint because we couldn't wash it away.

This suggested that the airport striping could be performed better by some like material, so we started experimenting. Eventually we came across a prepared, powdered paint known as Tempo Air Stripe, a product of Synkoloid Company, of Los Angeles. It has a casein base with a special binder added, is marketed in a dry powder form, and is prepared by mixing with cold water.

We laid several test strips on the runway for a trial use of about three months and found it to be much superior to traffic paint. There was no curling of the edges. It was very fast-drying and easy to apply. We have received approval, so far as CAA is concerned, for the use of this paint, and we used it to stripe the last runway. It should be pointed out, however, that we used the oil-base traffic paint on the concrete portions of the runways.

PHOTO COURTESY PHOENIX CHAMBER OF COMMERCE

**Here is the young lady whose return brought about the airport change.**

Inasmuch as this is a water-mixed powder paint, I am assuming that it will probably last about half as long as the other paint, and I am not sure about its staying qualities in parts of the country subject to considerable moisture. Of course, here at Phoenix, we have sunshine all the time and can produce the records to prove it.

### How Costs Compare

We had been paying $2.16 per gallon for traffic paint and we found that it took approximately 50 gallons for a 1-foot-wide stripe 5,000 feet long. Thus the cost for material alone was $112.50.

We find that we can do the same thing identically and probably have a better line for a material cost of $27 with the use of the Tempo Air Stripe.

We use 150 pounds per 5,000 feet, mix it in 5 gallon containers, and apply it with the regular push-type motor striper that our Street Department uses on city streets.

We now have runway stripe markings that stay down, don't become ragged looking, and don't cost as much to place.

And we got them because a "Welcome Jacque" sign wouldn't wear off our runway.

**M**unicipal
**P**ublic
**R**elations

# The City Tells Its Story

By HENRY DAVIS NADIG, *Director of Public Relations, New York Regional Plan Association*
*Executive Director, Association of Municipal Public Relations Officers*

## Public housing and MPR

YOUR local housing authority is probably the most active of any of the various types of authorities that have been developing in a growing number during the past several years. It may be the largest builder in your community—and it may have the toughest public-relations problems.

The housing authority must not only maintain favorable relations with the public but it must also deal with municipal, state, and federal officials and clarify those specific relations to the public. Understanding of the authority's purposes and objectives must be thorough all down along the line of authority personnel.

Miss Grace Bliss, Public Relations Director of the New York City Housing Authority, has something very pertinent to say about the importance of *policy* in some notes I have from her on MPR in relation to public housing. The housing authority is essentially a modern corporation (in New York City it is a public corporation headed by a board of five men who, among them, belong to three separate political parties), Miss Bliss, for purposes of contrast, calls attention to the MPR exploits of Alexander and Caesar in their respective reports to the folks back home.

"It seems unlikely," says Miss Bliss, "that General Farrell, who heads the Housing Authority, and during the war was first deputy to General Groves on the Manhattan Project, would need to engage in any myth-building about himself as Caesar did in his *Commentaries*. We are too well reported in the modern press to get away with such press agentry, even if tempted by such hoary tactics."

### Importance of Policy

No housing authority can carry forward its objectives by building itself up on any one or any few individuals in top management. Miss Bliss emphasizes the importance of policy—a matter which this column has stressed again and again in all MPR.

"Public relations starts with policy," she says, "as every up-to-date board chairman and company president and government agency head will acknowledge, and permeates every phase of the activities of an organization. Publicity, so often confused with public relations, is merely the good right arm of public relations."

Government agencies and semi-official agencies are more and more recognizing this—a fact to which big business awakened long ago. But there are still a large number of government agencies not fully cognizant of the great gains to be made through definite, firm, and thorough establishment of public relations policy.

"Not only does good public relations start with policy, but it is only as good as that policy is acceptable to the public," notes Miss Bliss.

### Good Will of the Public

She points out that a governmental agency such as the New York City Housing Authority (or any other housing authority) depends exclusively on the good will of the public. It was created for the express purpose of carrying out a national policy and has since assumed the role of carrying out state and city housing policy as well. Its powers were granted by the people and its funds authorized by them.

The New York City Housing Authority quite definitely recognizes that it has a public—a boss, so to speak—somewhat more comprehensive in varying interests and attitudes, at least, than that to which a private corporation is responsible.

In the capable hands of its Public Relations Director, the MPR of the New York City Housing Authority is continuously carried forward on the basis of this recognition. Top management in the Authority firmly accepts these attitudes, which are so important to good MPR. More than that, a real effort is made to have this approach accepted by every employee.

In connection with the training of new employees, Miss Bliss cites one course in which she was given the assignment of trying to impress a group of porters and maintenance men that they, too, were important in the public relations program. She had developed an audience participation talk, complete with blackboard, chalk, and a few "plants" in the audience to start the questions rolling.

"In my own mind," she tells the story, "I had worked out an evaluation chart, with percentages attached to the importance in public relations of such items as the appearance of the buildings and grounds of a housing project, promptness in repairing a leaking tap, courtesy toward tenants, and so on.

"By adding 1% for the credit rating in Wall Street, and 2% for publicity in the metropolitan papers, we would reach the grand total of a possible 100%. The people conducting the training course were in for a shock when the evaluation of these activities started coming from the floor: '75% for clean halls and stairs,' declared a porter; '40% for politeness,' said another; '60% for prompt repairs,' a maintenance man insisted."

After sifting out some pressing but extraneous inquiries such as "why do we get paid some pay-days on the 15th and other times on the 16th," and before even adding 3% for credit rating and publicity, Miss Bliss says they had reached a total of more than 250%.

With this disturbing arithmetical situation, it was pointed out that it might be well to re-evaluate and reach a more normal total of 100%.

"One philosopher in the audience, no doubt a follower of Einstein, raised strenuous objections," Miss Bliss reports.

"Don't cut them down," he said, "then if anything is missing it will still total 100%."

Miss Bliss says this was agreeable to the audience and was "accepted gratefully," by the staff conducting the session.

### Obligation to the Public

"Here, at least," she points out, "was one group of employees whose understanding of the importance of their work was pronounced. These employees had accepted a tenet which should be basic to all employees of a governmental agency, from directors down—an obligation to the public."

This attitude of the housing-authority employees is as important in the smaller municipalities as it is in the huge cities—and the alert authority will see to it

that a definite public-relations policy is formed and carried out.

Again, the only way that this can be handled effectively is through the expert in public relations. Policy must be developed and tested against the experience of those who are constantly dealing with public relations, with media, and with public opinion, before it can be put into practice.

All housing authorities cannot maintain public-relations staffs comparable to that of the New York City Housing Authority. The difference, however, should be one of size of staff and amount of work, not of quality nor of purpose.

It cannot be expected that all housing authorities will put out an annual report of the scope and character of the New York City Housing Authority's 16th annual report. Nevertheless, authorities *can* keep their respective publics well informed throughout the year and, in many cases, they *can* produce annual and other reports that succinctly and graphically tell the story of this important official agency.

As with other agencies the housing story is not always clear in the public mind, which does not make sound judgments or react as hoped for unless clarification accompanies announcements or has preceded important action through repeated use of the various public-relations media to tell the story.

### A Magnificent Record

The New York City Housing Authority is fortunate in that its program has grown without interruption since the end of the war, with the help of both state and city funds, and has met with wholehearted support from influential civic leaders, from municipal officials, and from the general public. Above all, it has had a magnificent record of construction accomplishment.

The situation may be different in other areas, where new housing authorities are being created as a result of the Federal Housing Act of 1949, and where existing ones have reactivation problems after a lapse of several years, during which no new construction has been undertaken. As of July 3, Public Housing Administration figures show that the list of loans approved by the President under terms of the Housing Act of 1949 brings the total amount of preliminary loans approved so far to $51,040,900 to cover planning of 273,436 units by local housing authorities in 519 localities.

In many municipalities, the anti-public-housing lobby is doing everything it possibly can to scuttle local authority programs. It is, therefore, all the more important that local-authority public-relations responsibilities be firmly fixed, centralized, and delineated to meet skillful and high-powered attacks upon public housing. Help is available to local housing authorities from many sources, but it will take trained public-relations personnel to marshal it effectively. The sooner housing-authority members realize this, the better can their over-all programs be developed.

Local housing-authority public-relations directors should certainly work closely with the municipality's own MPR setup; help should be given to the mayor and council, who have the direct job of defending public-housing proposals. Incidentally, two new pamphlets published by the National Housing Conference (1025 Vermont Avenue, NW., Washington 5, D. C.), should be of great aid in providing helpful ammunition to counter misleading opposition charges. These are: "The Truth About Public Housing," a 24-page, liberally illustrated two color job, and "Winning the Housing Fight," which outlines successful means of getting community support.

One other angle deserves some attention — the public-relations job with housing-project tenants. As the new projects are built and tenants move in from their former dilapidated slum quarters, it is of the utmost importance that they be educated and helped to understand the importance of the rules and regulations in the new projects and the importance of care and cleanliness with regard to their surroundings. Not that anyone will put coal in the bathtubs, but a really well-maintained project in which the families are neat and orderly probably can do more to boost public relations for public housing than any other single factor. This is definitely a task for the top management and public-relations staff to consider carefully before tenants move in.

## "Money-Go-Round" of City Planning

WITH this cartoon the Manchester (N. H.) Taxpayers Association dramatizes, in its May *Tax Topics* bulletin, an appeal to make planning effective.

In Manchester, the bulletin points out, the Planning Board continues to plan and the Board of Aldermen continues to appropriate funds for planning, but there are no funds to carry out recommendations.

"Here we have the vicious circle, the 'Money-Go-Round' of Planning, if you will. The usual 'ride' in newspaper headlines, says the Taxpayers Association, would read something like this:

*January*—Citizens Aroused by Conditions
*February*—Pressure Exerted on Politicians!
*March*—Conditions Must Be Remedied!
*April*—Crisis Approaching — Action Is Demanded!
*May*—Expert Planning Suggested! (Ah, an excellent idea).
*June*—Planning Board Reorganized!
*July*—New Planning Board Appointed!
*August*—New Board Conducts Survey
*September*—Board Employs Experts in Municipal Affairs!
*October*—Planning Survey Completed.
*November*—Planning Report Superb!
*December*—Aldermen Accept Planning Report!
*January*—NEW YEAR STARTS.

*OF CITY PLANNING*

"Conclusion: 'A copy of the report will be found at the City Library if anyone is interested!'"

## *Zurmuhlen is Chairman of Public Works Congress*

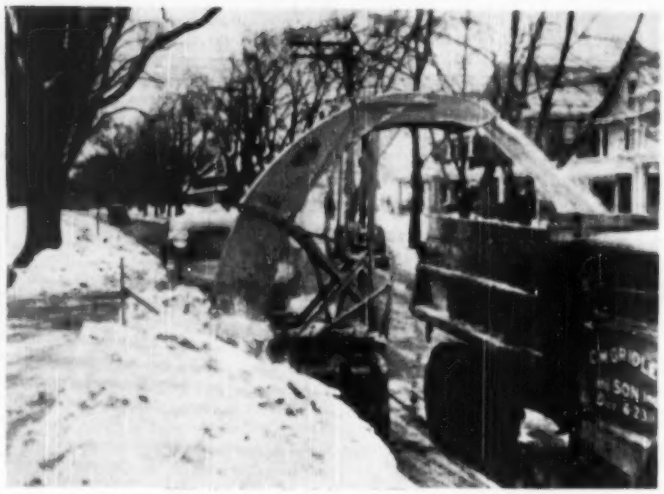
FREDERICK H. Zurmuhlen, Commissioner of Public Works, New York, N. Y. last month accepted the General Chairmanship of the 1950 Public Works Congress and Equipment Show to be held Oct. 15 to 18 in New York City. In accepting the appointment, Commissioner Zurmuhlen emphasized that "plans will be developed in such a way that the men and women who attend will carry away lasting memories of this conference and of the world's largest, most interesting, and well-administered city!"

In concluding his statement, Mr. Zurmuhlen said, "I can personally assure you of the official interest of the Mayor in this meeting of public-works officials from cities throughout the country. It is the objective of all concerned that this fall meeting shall be outstanding in the history of the American Public Works Association."

Leaders in the field of public works are to be discussion leaders at the general session in the Hotel New Yorker. Technical roundtables, the big equipment show at the Ninth Regiment Armory, and inspection trips will fill the remaining time, the Commissioner said. At least 1,200 public-works administrators, city officials, and engineers are expected to attend the conference.

# Hartford, Conn., Likes Salt To Ease Snow Problems

By ROYAL W. THOMPSON
*Director of Public Works*
*Hartford, Conn.*



**Hartford finds it a better policy to hire trucks for snow-removal work, rather than to operate its own. Here is the Snogo filling one of them.**

HARTFORD has a total of 200 miles of streets to clear of snow. Of this, approximately 125 miles are included in the downtown area, the main arteries leading into and out of the city, and other traffic feeders. The remaining 75 miles are residential.

To clear snow from this street system, we must gear ourselves to the maximum fall that we can reasonably expect and be ready for it at all times. During the past four years this maximum has included 18 inches in 24 hours and another storm of 17.7 inches in a similar 24-hour period occurring 10 days later. As every engineer knows, the mere fact that statistics show such a snowfall frequency about once every 15 years doesn't rule out the possibility that Mother Nature might fire two or three of them at you in rapid succession.

Our program is built around the use of salt. With it, we are able to melt away many light snowfalls and to prevent heavier falls from freezing and becoming difficult to handle. This allows us to clean the downtown area between midnight and 6 a.m., giving stores and merchants nearly normal operation the next morning.

To do this, we use two Tarco Scotchman salt spreaders and 13 Burch spreaders attached to Street Department trucks. The application varies from half a ton to 1½ tons of salt per mile, depending on the temperature. In addition, the local bus company hires six trucks to be used for salting and sanding portions of its routes. They also furnish six trucks with plows to help keep bus lines open. Their trucks are equipped with Good Roads spreaders.

We also operate, for plowing, 16 city-owned trucks and 40 contract-hire trucks. We are working toward a complete fleet of Frink plows with hydraulic lifts or with Westinghouse air lifts where the trucks so equipped are available.

### Hired Trucks

In general, we have found it better policy to hire trucks rather than use our own for plowing. The strain is terrific, and as long as we can hire a suitable truck with driver, fuel, and insurance for $6.00 per hour, we cannot very well afford to invest city money in the additional rolling stock.

In addition to this equipment, we have special-purpose units for plowing. These include two Walter Four Wheel Drive trucks equipped with center-pressure blades for special ice removal; two Allis-Chalmers motor graders, and three Case D1 tractors equipped with plow blades and rotary brooms.

### Snow Loaders

We also own two Haiss snow loaders, two Nelson loaders, two Barber-Greene loaders, two Snogos, and one Sicard Junior snow blower. Of the eight loaders, three have Caterpillar treads and five have pneumatic tires. Since Hartford is not a hilly city, the pneumatic tires work excellently and the Caterpillar treads are not particularly advantageous.

Our Snogos blow the snow into waste areas on about 10 curb miles and then are used to load trucks, at probably a faster rate than other loading equipment.

### Snow-Loader Efficiency

These figures on snow-loader efficiencies may be of interest: on a demonstration test, our smallest SnoGo recently loaded 39 consecutive 11-yard trucks in 50 minutes, or an average of 8½ cubic yards per minute. One of our Haiss loaders recently loaded 10 consecutive 11-yard trucks in 16 minutes for an average of 6.9 cubic yards per minute.

For hauling snow, we have set the following rental rate for truck and driver:

| | |
|---|---|
| 3 cu. yd. W.L. body built up to less than 10 cu. yd. | $3.25 hr. |
| 4 cu. yd. W.L. body built up to 10 cu. yd. but less than 12 cu. yd. | 3.50 |
| 5 cu. yd. W.L. body built up to 12 cu. yd. but less than 15 cu. yd. | 4.00 |
| Over 5 cu. yd. W.L. body built up to 15 cu. yd. but less than 18 cu. yd. | 4.50 |
| Over 18 cu. yd. | 5.50 |

We have adopted the 3-yard minimum size in order to eliminate underpowered 1½-yard trucks that caused considerable confusion in the snow dumps and other areas. My figures indicate that snow-removal costs were not over 15 cents a cubic yard for truck hire. This compares to 45 cents in large neighboring cities.

### Private Weather Service

We always use to the fullest the Weather Bureau services that come through the office at Brainerd Field, in Hartford. Although the staff has been most cooperative, their forecasts are not specific enough to actually meet our requirements. Consequently, we call on the Northeast Weather Service, located in Lexington, Mass., for a more specific service. This organization has been

guaranteeing us 95% accuracy on a 36-hour forecast. The service costs have been more than made up by savings in overtime wages and salt and abrasives that were not needed.

At present we make no attempt to use any but city employees for snow-removal work, and these are restricted to the Engineering and Park Departments. Only a few years ago the city would employ as many as 300 hand shovelers to go out and clean crosswalks and do hand shoveling on loader routes. For the past four years not an extra man has been hired. Employment of this type of labor, even if it were possible under today's conditions, means in my experience the least efficient help possible, and the inefficiency increases in direct proportion to the number of extra men so employed.

We do not have a two-way radio system in our department. However, the Police Department places a radio cruiser outside our plow-dispatching room at the Public Works yard and we are able to coordinate our plowing operations very nicely with the operations of the Police Department in posting and removing cars from the streets, and in contacting plow riders and key personnel.

When we set the time for plowing the downtown area and the main arteries, we arrange with the police for effective parking controls and operation of the tow service. The tow service is operated by the Police Department by private contractors. The fee for towing is $3, and to this is added a fine of $5.

We also employ the local radio station for alerting and warning the public of the start of parking bans. We use all the local Hartford stations and the cooperation is excellent.

# Schenectady, N. Y. Is Equalizing Assessment On Basis of 1941 Construction Costs

By IRVING H. BECK
*Assistant City Manager*
*Schenectady, N. Y.*

A MUNICIPALITY depends upon the stable base of real property for the principal source of its operating income. In Schenectady, real estate alone provides almost 60% of the revenue for operating purposes. It is obvious, with such a large share of the city's income derived from realty taxation, that the assessment of real property is a major financial operation.

The actual method used in establishing assessed values is not of as great importance as the basic principle that all assessments be determined by an equitable and fair method. In recognition of this basic principle, City Manager Christian X. Kouray some months ago instructed the City Assessor, John F. Lucey, to proceed with a comprehensive program of revaluation of all real property—a program never before undertaken in the city's history, and which will be followed by a periodic revaluation throughout the city.

## No Correction Made of Inequities Since 1933

Since 1933, when an arbitrary overall reduction of 10%, and 1934, when a reduction of 15% was made in the assessed valuations of the city, no correction has been made of inequities which existed at that time or which have crept in since. This drastic reduction of 25% in assessed values created even more inequities. In 1946, the city hired an appraisal firm to revalue all city property. When this survey was completed, it was filed away into oblivion. Yet for years, some taxpayers in the city have been paying 18% more than their fair share, while others have been paying 20% less.

In order to conduct this equalization of real property valuations, the personnel from the Public Works, Finance, and Assessment Departments were pooled, thus making extra budgetary cost unnecessary. The valuations on each piece of property, lots and buildings, are being carefully reviewed and revised. Land valuations, in the main, will reflect present-day conditions.

The revaluation of buildings and homes is based upon nationally accepted 1941 construction costs for the area. Reliable cost figures for all property in the city are available in the Assessor's office. The next step is to allow for depreciation of property to the present time.

In the case of new construction, these same 1941 construction costs are applied to the measurements of buildings. This is a sound method, as 1941 construction costs can be adjusted to 1950 costs by using nationally accepted construction costs indices for the Capital District area. Then an immediate depreciation of as much as 5% is allowed on all new construction, depending upon the type of construction.

A final step consists of adjusting property valuations for functional depreciation and obsolescence. The equalization of all real estate in the city will be entirely completed before August 1, 1950.

**IN A TALK on "Debt and Tax Limits" at the New York State Conference of Mayors and Other Municipal Officials, at Saratoga Springs, June 14, 1950, State Comptroller Frank C. Moore pointed out that:**

**"With notable exceptions in some municipalities, the job of assessing real estate lags far behind almost every other function of local government despite the fact that the local assessment roll is the base upon which we have constructed our system of local finance."**

**Schenectady is aiming to be one of the "notable exceptions," as Mr. Beck's statement, written for *THE AMERICAN CITY*, indicates.**

## Why the 1941 Base?

The use of 1941 construction costs as a yardstick with an allowance for depreciation through 1950 will result in a conservative and sound method of revaluing property. The National Association of Assessing Officers has recommended that a stable base year be used for property valuations, rather than using current-day inflated values which are subject to the fluctuations of the real-estate market. This method is used by such outstanding assessment authorities as John A. Zangerle, County Auditor (Assessor) for Cuyahoga County (Cleveland, Ohio).

Finally, the revaluation program now in process has as its chief purpose the equalizing of the tax burden fairly and equitably among property owners. At the end of May, 13,176 properties—more than one-half of all real estate in the city—had been reviewed, and of these, 63% will have the same or lower valuation. There will be an increase of less than $500 for 21% of the properties, an increase of from $500 to $1,000 for 9.5%, and increases of more than $1,000 for only 6.5%.

With the same yardstick applied impartially to all property, taxpayers can be assured of paying only their fair share of the cost of government, based upon a reasonable assessment of their property.

# 16 States Make In-Lieu Payments to Local Governments

LOCAL governments in 16 states receive payments in lieu of local property taxes on certain classes of state-owned real estate within their limits, a survey by the Federation of Tax Administrators shows.

According to the Federation's recent research report, "Taxation of Publicly Owned Real Estate," all state-owned property is exempted from local property taxation in 38 states. However, eight of these states make in-lieu payments to the local governments. Ten states permit local taxation of certain selective classes of state-owned land.

The 16 states making payments in lieu of taxes to local governments and the type of property are:

*California*—In-lieu payments are made to local governments on all state-owned forest land, excluding that in state parks.

*Connecticut*—The state reimburses the towns for loss of taxes on property owned by the state and located in the various towns. The state tax commissioner annually determines the value of all land owned by the state in each municipality and sets the amount of the grant in lieu of taxes.

*Florida*—Payment is made to three counties for loss of taxes on property therein which is owned by the state. Payments are made on lands owned by the Florida State Hospital, and on lands occupied by Florida State Prison.

*Illinois*—The University of Illinois makes in-lieu payments to local governments in whose jurisdiction it owns income-producing property. These payments were authorized by legislation adopted in 1949.

*Iowa*—The state makes payments to local governments in lieu of local school taxes on farm lands acquired for the use of state institutions.

*Massachusetts*—Reimbursement is made to local governments for loss of taxes on lands owned by the Commonwealth and used for public institutions, such as prisons or hospitals for the insane; fish hatcheries; game preserves or wild life sanctuaries; state military camp ground; state forests, and land under the care and control of the department of conservation and used for recreational or conservation purposes.

*Michigan*—The state makes payments to local governments in lieu of local property taxes only in certain cases. For example, the conservation department, which owns several million acres, reimburses the local units by means of a special statute which authorizes them to pay local taxes at the rate of 10 cents per acre. Colleges are also permitted to make in-lieu payments to municipalities. However, no taxes are required to be paid on general property which is utilized for the normal functions of government, such as office buildings, state hospitals, etc.

*New Hampshire*—Payments in lieu of taxes are limited to reimbursements on account of the loss of taxes due to acquisition by the state of forest lands which have been made into preserves or public parks.

*New Jersey*—Rutgers University, which is partly state-owned, makes in-lieu payments to local governments.

*New York*—The state does not make payments generally to local governments in lieu of local property taxes on state-owned lands. Cornell University, which receives some state support, makes in-lieu payments to local governments.

*Oregon*—The state makes payments only on special types of state-owned property, e.g., public hunting grounds acquired by the state game commission.

*Pennsylvania*—The Department of Forests and Waters and the Pennsylvania Game Commission make payments to local subdivisions in lieu of taxes on state forest, game, and flood-control properties.

*South Dakota*—The state legislature has the authority to appropriate money to reimburse local governments for the revenue they would normally receive from certain classes of state-owned land if it were taxable. The classes of land on which they have made appropriations in lieu of property taxes in the last few years are those under the jurisdiction of the Commissioner of Schools and Public Lands and those lands belonging under the jurisdiction of the Board of Corrections and Charities lying outside the incorporated limits of cities and towns.

*Texas*—The state makes payments to local governments in lieu of local property taxes on land owned by the University of Texas.

*Virginia*—The state of Virginia is not required by general law to make payments to local governments in lieu of property taxes inasmuch as localities are prohibited from taxing state-owned property. However, after any delinquent lands have been acquired by purchase or gift by the state, it shall pay one-fourth of the gross receipts from the land to the county in which it lies.

*Wisconsin*—Payments are made to school districts in lieu of school taxes on state forest lands.

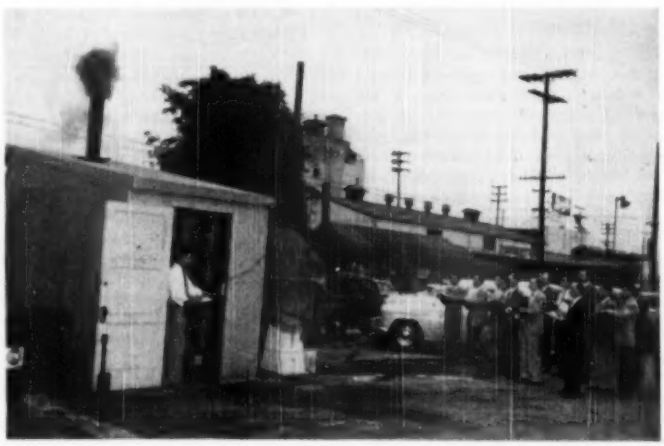
# Spot That Smoke — Correctly

TO BE a good smoke inspector requires the same qualification that is needed for anything else—practice.

The Los Angeles County Air Pollution Control District provides this practice for its inspectors so that any of them can go on the witness stand and give acceptable, expert testimony on the density of smoke that may have been discharged from an offending chimney. How this training program was established was described by Harry E. Kunkel, Special Assistant to the Director of the District, at the recent Smoke Prevention Association meeting held in Montreal.

Inspectors all attend a "Smoke School," and must be able to record smoke opacities with a maximum deviation of less than a half Ringelmann number in order to be graduated. All are returned to the school at least once every two months for a refresher course. In most instances the inspector's accuracy becomes nearly perfect.

The School uses a smoke-producing apparatus, complete with a photo-electric cell-type smoke indicator, and calibrated in percent density and Ringelmann number. Observers in training stand at varying distances from the stack and position themselves so that they are looking at right angles to the column or trail of smoke and not facing the sun. During initial training periods, the observer glances from the smoke to an official copy of the Ringelmann Chart which is mounted in line with stack. Later he judges opacity without the chart.



**Refresher course in smoke capacity. Controlled smoke is discharged for checking.**

# Storm Inlet Studies

**Johns Hopkins University undertakes study to develop fast-draining gutter**

THE Institute for Cooperative Research of the Johns Hopkins University in Baltimore, Md., has tackled one of the street maintenance man's chief headaches, the clogged and faulty storm-water inlet and storm sewer. Dr. J. C. Geyer, of the Department of Sanitary Engineering of the University, is heading up the study for the Institute.

### Developing Improved Techniques

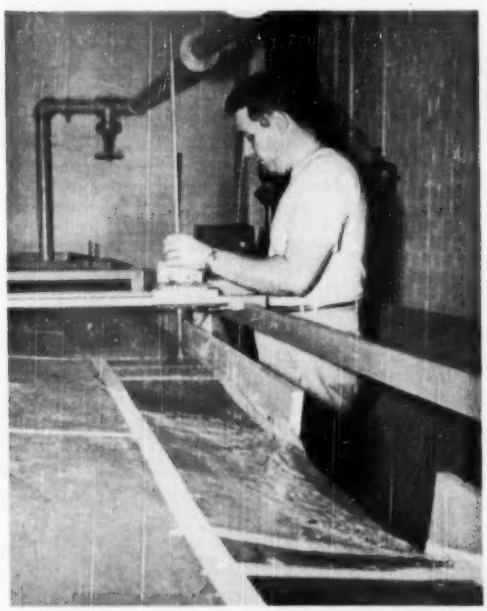
The project calls for the development of improved techniques for the design of inlets and storm sewers, and is sponsored jointly by the Baltimore Municipal Department of Public Works, the Baltimore County Metropolitan District, and also the Maryland State Roads Commission.

An hydraulic street model has been constructed in the Civil Engineering Hydraulics Laboratory in Latrobe Hall on the Hopkins campus. Both the gutter slope and cross-street slope are adjustable, and the water rushes out down the 20-foot wooden platform where model inlets may be readily installed for testing under a variety of discharges, slopes, deflectors, depressions, and so forth.

Concurrent with laboratory study which lacks the variables of actual drainage, field tests of inlets are being made to check the model results and to study problems that cannot be reproduced in the laboratory.

The scientific group is dropping floating spheres, such as table-tennis balls filled with paraffin; chemicals, such as sodium chloride solutions; leaves and trash, and several kinds of measuring instruments into the flooded gutters in a serious effort to measure the amount of water an inlet will take and to learn what causes it to clog. It is also hoped that a way may be found to increase capacities, reduce clogging and to avoid the bumps at inlets which cause automobile and bus drivers to veer their vehicles away from the curbs.

**B. C. Goodell adjusts the salt-dilution-measuring device. The weir box for measuring the flow into the gutter is in the background. The two methods check each other.**



**George Lewis gauges the flow into the gutter of a model used for inlet studies at John Hopkins University.**

### Questions via Post Cards

The research was preceded by a post-card questionnaire to 150 cities and state highway departments so that all findings which have been collected so far might be taken into account.

One of the more colorful aspects of the new research is the study of summer thunderstorms, squalls, or cloudbursts and the flows in gutters and sewers produced by these storms.

Rain-gauging systems are being installed in selected areas to learn when, where, and how fast the rain comes. Gutter and sewer gauges are also being devised to keep track of this water during its passage over the surface and down the drain out of the area.

### Selected Areas

The selected areas are from 6 to 20 blocks, with intensive rain-gauge nets. Dr. Geyer's one hope is for a wet summer, with plenty of rain at the time and place needed for the study. The whole system is planned to function automatically, so that if none of the research team were in the area they still could obtain the desired information from the various charts.

# Department Public Relations Grows In New York City

By SYL POINTKOWSKI

PUBLIC relations has many definitions—some technical, some trite—but, among the most apt, is that employed by Howard Stephenson, New York University instructor in Industrial Publicity:

*"Public relations is being good—and getting credit for it!"*

It's a philosophy put into practice by the government of the City of New York under Mayor William O'Dwyer, whose executive secretary, William J. Donoghue, concededly has broken all existing records in giving the municipality "credit for being good."

Under Donoghue's over-all direction, public information and public relations administrators are administrators on an administrative level, not subordinates on a subordinate plane.

### Police and Fire Posts

For instance, the position of secretary was restored in the Police Department after a lapse of more than a dozen years. Named to fill the post was former newspaperman Frank Doyle, who had earlier served as publicity chairman of the Democratic State Committee. As secretary, Doyle is also director of the Bureau of Public Relations, which services the press with police news and which has formulated a public relations policy which this year became part of the Manual of Rules and Regulations.

The Fire Department has another public relations administrator who is also secretary to the department—Dennis Tilden Lynch, veteran political writer for the *Herald Tribune* and author of books on political statesmen and their administrations.

Hospitals, Health, Sanitation, Marine and Aviation, Welfare, Commerce, the Traffic Commission, Transportation and Public Works have either commissioners' assistants or public relations and public information directors.* Other municipal officers who are elective have their spokesmen, too; for instance, the Comptroller, President of the Council, Borough Presidents, and elected District Attorneys.† Important in and to the city also are the key jobs held in other governmental bodies, such as that of the New York City Housing Authority, where Grace L. Bliss is Director of Information, and the Port of New York Authority, where Lee K. Jaffe is Director of Public Relations.

While the posts are not necessarily without precedent, the expanded manner of operation is an improvement over former methods. For one thing, there is coordination, so that Mr. Donoghue is kept informed of current and future activity. An administrative assistant, another former newspaperman, Jack Tierney, serves as liaison in this respect. The theory is to operate the city's public relations in the same manner that a newspaper office is run. From the administrative standpoint and from the point of view of service to the taxpayer, the idea is practicable and efficient. The only hitch—and this is a potential hazard which does not now exist—is this: theoretically, departments are run independently of the Mayor's office. The Commissioners are appointed with the understanding that they and they alone are responsible for the conduct of the department. Thus, in theory, a Commissioner could choose to by-pass or ignore his appointing officer in matters which include public relations, publicity, and news service.

The potential bug has yet to make its appearance partly because of Mr. Donoghue's energy. Red-headed, and aggressive in appearance, Bill nevertheless is soft-spoken and calm. The relationship existing between his "staff" in other agencies and himself is one of fraternalism, almost akin to that found on the staff of a large newspaper where employees are known for their talents.

### Radio Station WNYC

Radio plays its part in the over-all informational service provided by the City of New York. The nation's first municipally owned station and the only municipally owned non-commercial station is now in its 26th year and is under the direction of Seymour Siegel who heads a staff of 67. It operates an FM outlet (one of the most popular FM stations in the New York area) and eventually hopes to go into TV. Public service programs are the rule rather than the exception with WNYC and the station has 150 citations to prove it. They come from the Ohio State Institute of Radio Broadcasting, the Institute of Educational Broadcasting, the National Board of Fire Underwriters, *Variety*, *Billboard*, and others.

An example of informational service for the city as a whole can best be illustrated in the event of a severe snow storm. Under the direction of the Sanitation Information Director, assistants are assigned to the five borough headquarters with latest reports on road conditions and other pertinent data which is available not only to newspapers but also to other city agencies, motor haulage firms, utilities, drivers, and public.

Employee organizations within the past three years have also become public-relations minded. The Patrolmen's Benevolent Association and the Uniformed Firemen's Association have set the pattern for such groups as the Civil Service Forum, sanitation men, International Building Service Employees Union, Federation of State, County and Municipal Employees, United Public Workers and American Civil Employees Union. Because of the costs involved, some of the groups have engaged the services of advisors rather than staff directors but here, too, the trend is toward a permanent director.

Recently, the *Saturday Evening Post* ran an article entitled "Why New York?", which was interpreted as being unduly critical of the city's facilities for business. One result from the ensuing conferences of the publicity staffmen is a series of articles citing advantages, to be distributed to business groups.

Public information programs are an integral part of administration, Mr. Donoghue avers. Under his direction the trend has been toward expanding these services within budget limitations. The system is essential in any community, he feels and it is vitally indispensable in larger cities.

"The public should not have to guess about conditions; they have a right to know and it's our job to see that they get the information," he says.

The only reward, aside from a livelihood, which the public relations specialists seek is the "credit" which their department gets for "being good."

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Department or Office—Public Relations or Information Directors:

* Hospitals, William Ettel; Health, Carl Preisbuld; Sanitation, John Wagner; Marine and Aviation, Irwin Zeltaer; Welfare, Sylvia Taylor; Commerce, Frank Lee Donoghue; Traffic Commission, Dave Post; Transportation, William Jerome Daly, Vincent Sexton; Public Works, Alex. Chopin and William L. Sylvester.

(Almost all these positions were either created or filled in the past four years.)

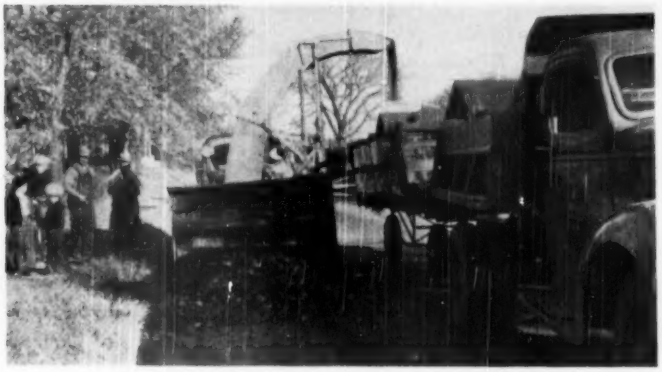
† Information Directors for the following offices are:

Comptroller, Richard A. Maher; Council President, Harry Kingsbury; New York District Attorney, Jerry O'Leary; Brooklyn Borough President, Joseph Schmalacker; Manhattan Borough President, Charles S. Hand; and others.

About the author: Sylvester Pointkowski is public relations director of the Patrolmen's Benevolent Association of the City of New York and of the Police Conference of the State of New York. He was associate editor of *The Chief*, oldest government employees newspaper in America, for 10 years, covering municipal, state and federal governmental agencies and the activities of employee organizations. He serves as publicity and public relations advisor to other groups.

# How Davenport Gathers Leaves

The tractor with its leaf broom bulldozes the leaves into a pile.



If they are dry, the Sno-Go blows them into the trailer.

If the leaves are wet the Barber-Greene loader picks them up.

**A snow blower for dry leaves, and a conveyor for wet, puts leaf-loading on a high-speed basis**

By RALPH C. GRAHAM
*Superintendent of Public Works*
*Davenport, Iowa*

LEAF-gathering is strictly a mechanized operation in Davenport. (1940 population, 60,751). Our first step is to bring out our rubber-tired International tractor equipped with a leaf broom, to push the leaves into large piles in the middle of each block. From here the leaves are picked up either by the Barber-Greene loader or the Sno-Go blower. We find that when the leaves are wet the Barber-Greene works better. When the leaves are dry, the Sno-Go works faster. We are very well balanced in our equipment. We can pick up rotted leaves handily with the Barber-Greene; in the past, we had to use endloaders to scoop them up, at a much higher cost.

## Leaves Given to Gardeners

Every fall we advertise in the paper for people who want leaves for garden purposes and make a list of them. As we come to their area, the order is filled.

We load the leaves into trailer racks, which were built in our public-works yard. These hold the equivalent of about six average truck loads.

# Additional Local Public Works Projects

ADDITIONAL projects which have been approved for planning advances from the Community Facilities Service, now a part of the Housing and Home Finance Agency, are listed below. The List is ample evidence that the Advance Planning Program, which offers local subdivisions federal assistance in the planning of needed public works, is meeting with widespread acceptance.

The projects listed are in addition to those published in the July issue of THE AMERICAN CITY, on pages 112 and 113. School-planning advances are not included, but otherwise the list is up-to-date as of May 24.

Additional listings will appear in future issues. A tabular summary of approved advances for plan preparation as of July 1 follows:

| *Type* | | *Estimated Cost* | *Planning Advance* |
|---|---|---|---|
| Highways, roads and streets | 36 | $ 5,534,560 | $ 228,700 |
| Bridges, viaducts, grade separations | 23 | 8,722,004 | 305,680 |
| Airports | 4 | 4,766,710 | 125,280 |
| Sewer facilities | 293 | 214,485,341 | 8,410,270 |
| Water facilities | 87 | 26,864,749 | 935,000 |
| Sanitary facilities | 7 | 2,947,787 | 123,760 |
| Schools and educational facilities | 231 | 133,381,068 | 4,357,900 |
| Hospital, health facilities | 9 | $ 11,116,545 | $ 411,440 |
| Other public buildings | 38 | 45,836,324 | 1,091,300 |
| Parks, recreational facilities | 5 | 2,647,971 | 87,000 |
| Miscellaneous public, such as port improvements, power projects, etc | 16 | 20,865,379 | 358,340 |
| | 749 | $477,188,468 | $13,404,670 |

## *Recent Approved Planning Advances for Local Projects*

| *Location* | *Type* | *Estimated Cost* | *Planning Advance* |
|---|---|---|---|
| | **ALABAMA** | | |
| | **Water Projects** | | |
| Enterprise | Well, pump station, 400-mg ground storage reservoir; 35,200 lf 2"-10" CI pipe | $237,510 | $ 9,760 |
| | **Utilities** | | |
| Florence | Natural-gas distribution system | 1,134,322 | 28,000 |
| | **Port Facilities** | | |
| Mobile | Expansion of dock facilities including an apron wharf and transit shed | 2,565,620 | 30,000 |
| Mobile | Expansion of bulk-handling plant including conveyors, unloading tower, and railroad siding | 730,540 | 25,000 |
| | **ARIZONA** | | |
| | **Roads, Streets, Bridges** | | |
| Casa Grande | 28 miles of grading; 26,000 lf ditching; 60,000 lf curbs and gutters; 87,000 lf sidewalks | 340,500 | 18,200 |
| Winslow | Paving, curbs, gutters | 49,999 | 2,300 |
| | **ARKANSAS** | | |
| | **Water Projects** | | |
| Gurdon | Well, treatment plant, new mains | 72,500 | 2,940 |
| | **CALIFORNIA** | | |
| | **Roads, Streets, Bridges** | | |
| Auburn (2) | Widening and alignment | 49,330 | 1,240 |
| Culver City | Widening 2 streets | 67,760 | 4,220 |
| Oakland | Railroad underpass | 540,124 | 20,000 |
| San Diego | 2 bridges | 2,286,000 | 57,500 |
| Willits | Paving parts of 14 streets | 262,080 | 19,600 |
| | **Public Buildings** | | |
| Stockton | Public library | 1,178,000 | 57,000 |
| Ventura | City hall | 130,200 | 7,200 |
| | **COLORADO** | | |
| | **Water Projects** | | |
| Adams County (Adjacent to Denver County) | Transmission and distribution lines | 148,886 | 4,500 |
| | **CONNECTICUT** | | |
| | **Utilities** | | |
| Hartford | Survey and report concerning refuse and garbage disposal; plants for incinerator | 1,000,000 | 45,000 |
| | **FLORIDA** | | |
| | **Water Projects** | | |
| Hialeah | New lines, 100-mg elevated tank | 395,000 | 17,500 |
| | **Roads, Streets, Bridges** | | |
| De Funiak Sp'gs | Improvements, drainage | 136,750 | 7,500 |
| | **Public Buildings** | | |
| St. Augustine | St. John's County Jail | 138,300 | 5,200 |
| | **Recreation** | | |
| Sarasota Co. | Myakka River State Park: Dock, lodges, etc | 215,000 | 5,000 |
| Duval County | Little Talbot Island State Park: Cabins, pool, tent-house, picnicking facilities | 975,000 | 15,000 |
| | **Water-Front Improvements** | | |
| Jacksonville | Bulkhead; paving of river boulevard, landscaping, parking areas | 2,435,100 | 30,000 |
| | **IDAHO** | | |
| | **Water Projects** | | |
| Kimberly | New mains, pump house | 40,000 | 1,200 |
| | **Roads, Streets, Bridges** | | |
| Alameda | Paving | 142,150 | 4,400 |
| | **ILLINOIS** | | |
| | **Water Projects** | | |
| Jerseyville | New supply, booster station, reservoir, treatment plant | 540,000 | 19,660 |
| | **Roads, Streets, Bridges** | | |
| Evanston | Grade separation | 346,000 | 14,500 |
| | **Utilities** | | |
| Kankakee | 30-ton per day incinerator | 395,800 | 13,600 |
| | **Public Buildings** | | |
| Riverside | City hall addition for fire and street departments | 100,000 | 4,900 |
| | **INDIANA** | | |
| | **Water Projects** | | |
| Arcadia | Mains, well supply, softening plant | 65,100 | 2,400 |
| | **IOWA** | | |
| | **Water Projects** | | |
| Imogene | Well supply, mains | 22,914 | 840 |
| | **Roads, Streets, Bridges** | | |
| Vinton | Street widening, drainage | 63,733 | 2,320 |
| | **Public Buildings** | | |
| Cedar Point | Town hall and fire station | 45,700 | 2,100 |
| | **Utilities** | | |
| Vinton | Street-lighting system | 26,016 | 1,180 |
| | **Public Health** | | |
| Muscatine | General hospital | 1,068,250 | 45,000 |
| | **KANSAS** | | |
| | **Water Projects** | | |
| Pittsburg | 2 elevated steel tanks | 440,000 | 18,000 |
| | **Public Buildings** | | |
| Pittsburg | Remodeling building for city hall | 274,000 | 12,200 |
| " | Fire station | 94,000 | 4,000 |
| | **KENTUCKY** | | |
| | **Water Projects** | | |
| Hardinsburg | Treatment plant; reservoir improvements | 50,229 | 1,780 |
| | **MASSACHUSETTS** | | |
| | **Port Facilities** | | |
| South Boston | Remodeling of Castle Garden Terminal, including new transit shed, improvements to wharf, roads, railroad facilities and utilities | 1,200,000 | 44,000 |

# Approved for CFS Planning Advances

## *Recent Approved Planning Advances for Local Projects*

| *Location* | *Type* | *Estimated Cost* | *Planning Advance* |
|---|---|---|---|
| | **MICHIGAN** | | |
| | **Water Projects** | | |
| Eau Claire | New system | 103,400 | 3,600 |
| Escanaba | Filtration plant, concrete reservoir | 700,000 | 22,120 |
| Holt | Wells, 50,000 lf 6"-8" mains, elevated storage tank | 154,300 | 5,000 |
| | **Public Buildings** | | |
| Detroit | City-county office and courts building | 19,286,305 | 105,000 |
| | **Parking Facilities** | | |
| Grand Rapids | One 5-level and one 4-level garage, and parking plaza extending over Grand River | 1,258,000 | 21,680 |
| | **Utilities** | | |
| Harbor Spring | Electric-light system additions | 172,000 | 4,700 |
| | **MISSISSIPPI** | | |
| | **Water Projects** | | |
| Amory (3 units) | Treatment plant, 54,170 lf 2"-8" and 18,660 lf CI pipe | 263,700 | 7,220 |
| | **MISSOURI** | | |
| | **Water Projects** | | |
| Albany | Mains, filtration plant | 35,500 | 1,420 |
| Gainesville | Well, storage tank, pump house | 46,950 | 1,720 |
| Maysville | Earth dam to form 50-mg reservoir, lines | 55,000 | 2,040 |
| | **Streets** | | |
| Mexico | 230,750 sq yds paving | 1,123,674 | 41,520 |
| | **MONTANA** | | |
| | **Water Projects** | | |
| Dillon | Renovations; development of new source | 231,750 | 10,000 |
| | **Roads, Streets, Bridges** | | |
| Sidney | Surfacing, curbs, gutters | 494,541 | 20,780 |
| | **NEBRASKA** | | |
| | **Sewers and Sewage Projects** | | |
| Louisville | Treatment plant | 27,151 | 980 |
| Odell | Treatment plant; main additions | 64,312 | 2,100 |
| Polk | Extensions, lift station, treatment plant | 82,473 | 3,000 |
| Pender | Extensions; treatment plant | 89,666 | 1,640 |
| Sterling | Extensions; treatment plant | 77,621 | 2,840 |
| | **Utilities** | | |
| Decatur | Rebuilding electrical distribution system | 19,727 | 1,060 |
| | **NEW YORK** | | |
| | **Water Projects** | | |
| Albany | Filtration plant additions | 540,000 | 19,740 |
| Long Beach | Treatment plant | 450,000 | 27,000 |
| Waterloo | 16,358 lf 12" and 9,700 lf 6"-8" CI pipe. Investigation of 3 available sources. (Present supply from Barge Canal.) | 212,000 | 7,560 |
| | **Roads, Streets, Bridges** | | |
| Buffalo | Bridge on Buffalo River | 1,205,000 | 47,000 |
| | **Utilities** | | |
| Long Beach | Incinerator | 340,600 | 18,600 |
| Penn Yan | New electric power plant | 480,230 | 15,000 |
| | **NORTH CAROLINA** | | |
| | **Water Projects** | | |
| Raleigh (3 units) | 1—Raising dam at Lake Johnson | 174,600 | 6,400 |
| | 2—Steel tank; feeder mains | 307,000 | 12,820 |
| | 3—1-mg capacity filters, clear-water reservoir, 400 hp diesel pump | 1,190,000 | 50,280 |
| | **NORTH DAKOTA** | | |
| | **Water Projects** | | |
| Rhame | Improvements | 44,000 | 1,420 |
| | **OHIO** | | |
| | **Water Projects** | | |
| Woodsfield | New supply, treatment plant, storage reservoir | 177,200 | 3,600 |
| | **Public Buildings** | | |
| Columbiana Ct. | Hospital at County Home | 178,000 | 7,000 |
| Center Twp. | Juvenile receiving home | 120,000 | 5,000 |
| Lisbon | Courthouse annex | 247,000 | 10,000 |
| " | Jail | 334,500 | 15,000 |
| Ravenna | Portage County courthouse and jail | 1,447,000 | 52,000 |
| | **OKLAHOMA** | | |
| | **Water Projects** | | |
| Cherokee | Supply, reservoir, pump station, lines | 199,200 | 6,760 |
| | **Roads, Streets, Bridges** | | |
| Okmulgee Ct. (2 units) | 1—Concrete girder type bridge | 31,130 | 1,280 |
| | 2—Grading, surfacing, drainage | 58,000 | 2,640 |
| | **PENNSYLVANIA** | | |
| | **Water Projects** | | |
| Ambridge | Dam, 31,200 lf 14'-18" pipe, treatment plant alterations | 683,000 | 23,500 |
| Waynesboro | Dam and reservoir | 425,000 | 16,000 |
| | **SOUTH DAKOTA** | | |
| | **Water Projects** | | |
| Kennebec | Additional alterations | 56,000 | 2,500 |
| | **Roads, Streets, Bridges** | | |
| Hot Springs | 29 blocks surfacing, curbs, gutters | 133,400 | 5,600 |
| | **TENNESSEE** | | |
| | **Roads, Streets, Bridges** | | |
| Hamilton Cty. | 13 highway bridges | 677,300 | 22,400 |
| | **Parking Facilities** | | |
| Nashville | 5-level underground garage | 4,255,000 | 180,000 |
| | **Utilities** | | |
| Covington | Electric plant additions | 84,739 | 2,700 |
| Nashville | Central heating plant | 636,000 | 27,000 |
| | **TEXAS** | | |
| | **Water Projects** | | |
| Chambers Cty. | Complete system | 167,000 | 6,300 |
| Mineral Wells | 42,000 lf 6"-8" mains, 50-mg steel tank | 162,000 | 5,800 |
| Rosebud | New tank, improvements | 88,275 | 3,740 |
| | **Utilities** | | |
| | (Brazos River Conservation and Reclamation District) | | |
| Jones County | Dam, reservoir, power plant | 3,800,000 | 40,000 |
| Haskell and Stonewall Counties | 2 dams, reservoir, power plant (These units supplement 12 originally proposed.) | 6,790,000 | 77,500 |
| | **UTAH** | | |
| | **Water Projects** | | |
| Centerville | 250-mg reservoir, mains | 109,260 | 3,800 |
| Clarkston | 150-mg reservoir | 30,600 | 1,300 |
| North Ogden | 400-mg reservoir, mains | 86,660 | 3,140 |
| Redmond | Well, pump, 150-mg reservoir | 16,400 | 800 |
| Tremonton | 400-mg reservoir; 29,400 lf 6"-12" pipe, development of springs | 132,400 | 5,200 |
| | **Public Buildings** | | |
| Salt Lake City | County jail and record building | 2,482,000 | 98,600 |
| | **VERMONT** | | |
| | **Water Projects** | | |
| Essex Center | New system | 70,450 | 2,500 |
| | **WASHINGTON** | | |
| | **Water Projects** | | |
| Spanaway | Wells, tank, 100,000 lf of 4"-10" mains | 314,000 | 15,600 |
| | **Public Buildings** | | |
| Olympia | Thurston County courthouse | 198,000 | 9,440 |
| | **WISCONSIN** | | |
| | **Public Buildings** | | |
| Milwaukee | 9-story City Hall annex | 3,759,500 | 110,000 |
| | **WYOMING** | | |
| | **Roads, Streets, Bridges** | | |
| New Castle | Grading, curbs, gutters, drainage | 104,256 | 4,260 |
| Rawlins | Grading, curbs, sidewalks, drainage | 228,467 | 7,360 |
| | **HAWAII** | | |
| | **Public Health** | | |
| Honolulu | 100-bed dormitory at Waimano Home for feeble-minded | 223,200 | 10,000 |
| Kaneohe | TB ward | 358,000 | 15,000 |

# Women Mayors of South African Cities

THROUGH the courtesy of the *South African Municipal Magazine*, THE AMERICAN CITY is enabled to publish these portraits of some of the women occupying high municipal office in South African cities.

DURBAN is one of the principal ports in South Africa and has a population of 370,000 Europeans, natives and Asiatics.

ROODEPOORT is situated on the west of the Witwatersrand goldfields. Excluding natives employed in the mines, it has a population of 74,000.

SALISBURY is the capital of Southern Rhodesia. It has a population of 84,000, comprising Europeans, natives and Asiatics.

POTCHEFSTROOM, the original capital of the Transvaal, has a population of 27,000.

PRETORIA is the administrative capital of the Union of South Africa and has a population of over 242,000.

SPRINGS is situated on the eastern portion of the Witwatersrand goldfields and has a population of 106,000, excluding native miners.

Mrs. Ken Clarke,
Mayoress of Durban, Natal.

Mrs. A. M. G. Maytom,
Deputy-Mayor of Durban, Natal.

Mrs. H. M. McGrath,
Mayor of Roodepoort, Transvaal.

Mrs. R. M. Cleveland, Mayoress of
Salisbury, Southern Rhodesia.

Mrs. Aletta J. E. Nel, six times
Mayoress of Potchefstroom, Transvaal

Mrs. V. M. Rudd,
Mayoress of Pretoria, Transvaal.

Mrs. Fan Wright,
Mayoress of Springs, Transvaal.

# Zoning and Planning Notes

Edited by NORMAN WILLIAMS, Jr.

## Funeral Parlor in Residential Area—Final Vote Before Enactment of Ordinances

CONNECTICUT. *Jack v. Torrant*, 71 Atlantic (2d) 705 (Connecticut Supreme Court of Errors, February 21, 1950).

ONE Torrant bought an 18-room house in the famous and lovely old New England town of Litchfield, and converted it for use for apartments and a funeral parlor. When the neighbors brought an action to enjoin the latter as a violation of the local zoning ordinance and as a nuisance, the Court held that (1) Litchfield's zoning ordinance had never been legally enacted, and (2) that an undertaking establishment in a residential area such as this was a nuisance.

As for the first point, a zoning commission was set up, pursuant to statutory authorization, in the Town of Litchfield. That commission met numerous times, and in the spring of 1945 unanimously approved a set of zoning regulations for the town to become effective in July of that year. When a public hearing was held on these regulations in June 1945, apparently no objection was raised which impressed the zoning commission with the need for any changes. The commission, therefore, did not meet again, but went ahead on the assumption that the zoning regulations went into effect in the month of July. The relevant enabling act required that "No such regulation or boundary shall become effective or be established until after a public hearing in relation thereto"; and the Court held that the failure to take a final vote after the public hearing rendered the proceedings totally defective. As a result at least temporarily, Litchfield has no zoning ordinance.

As for the second point, the Court held in effect that a funeral parlor is a nuisance in a purely residential district, although it might not be so in an area with mixed residential and business uses. The house used for a funeral parlor was located in one of the most attractive residential streets in Litchfield with large open spaces and many houses of architectural and historical significance. The Court followed traditional doctrine in recognizing that the existence of an undertaking parlor near residences has a depressing effect on the average man, even though there is no question of odor or danger to health.

"... the normal man is affected by the consciousness of death so that if this is occasioned near his home his quiet enjoyment there, to which he is entitled, is adversely affected.

"The business was, however, especially harmful to the other properties on North Street, because a funeral business with its morgue, funeral processions and attendant activities is a particularly undesirable business, and the invasion of the neighborhood by it would adversely affect and ultimately destroy the privacy, seclusion and quiet so characteristic of this residential community and, therefore, would substantially reduce the market value of its residential property."

The reader of this opinion is not surprised that, even if the local zoning ordinance was found to be non-existent, the Court found a way to eliminate a funeral parlor from one of the most renowned old residential areas in the United States. However, one caveat to the decision must be noted. If protection against undesirable uses, by either nuisance or zoning, is to be limited to purely residential areas, the inevitable effect is to grant greater protection to the residents of expensive high-class residential neighborhoods than to the usually poorer inhabitants of mixed neighborhoods. This is not a particularly happy example of democracy at work.

## Residence District—Writing Column and Distributing Pamphlets As Accessory Use

CALIFORNIA. *City of Beverly Hills v. Brady*, 215 Pacific (2d) 460 (California Supreme Court, March 10, 1950).

IN THIS case a Dr. Brady, the author of a health column syndicated in 130 newspapers throughout the United States and Canada, lived in a residence district in Beverly Hills. In addition to writing the column, he distributed pamphlets at cost through the mails; one bag of mail was received and another bag sent out every day. Dr. Brady, with secretarial help, answered his mail and sent out the pamphlets in a room over the garage, fitted with files, desks and typewriters. It was agreed that this activity did not interfere with the residential appearance of his home, or the residential and aesthetic character of the area. While admittedly writing the column was permitted, the City of Beverly Hills brought an action to enjoin sale of the pamphlets as a business in violation of the zoning ordinance.

The California Supreme Court held that mailing of the pamphlet was permitted because incidental to writing the syndicated column, and because it was not for profit. The Court then went on with one of the rare examples of judicial recognition that aesthetic protection is one of the primary basis of strict residential zoning regulations:

"Obviously the conduct of industry pursued for profit was prohibited because of the general tendency to interfere with the residential character assigned to the district. The zoning restrictions are intended to retain the highest residential and aesthetic value to the property owners and the district.

"Unquestionably an author may answer his mail and include requested literature. Here the mailing of pamphlets is merely incidental to the writing and publication of the syndicated article, which is conceded to be a permissive use. The pamphlets are not independently advertised, nor is the defendant in the business of publishing or selling the pamphlets at a profit. His livelihood is derived from the authoring of the syndicated articles. It is not contended that the activities interfere with the general character and aesthetic harmonies of the district.

"Furthermore, assuming that there is involved the sale or handling of a commodity although no profit is derived or expected, or that such activities constitute a non-residential and prohibited use, the question then is whether the defendant could be deprived of the right, pursuant to the protective provision of the ordinance or otherwise, to pursue on his premises activities incidental to an unrestricted use, when such activities do not interfere with the primarily residential character of the district or affect the aesthetic values sought to be preserved."

### *Public Housing and Land Values*

THE JOURNAL OF HOUSING reports in its July issue that 32 Chicago real-estate men, some of whom "are opposed to public housing on various principles," have said "that in so far as land values went, public-housing projects could not be opposed successfully on the ground that they depreciated values." Frances Fabe, a graduate student at the University of Chicago, interviewed 34 real-estate men operating in the areas around seven Chicago Housing Authority projects in the course of gathering material for a master's thesis on "The Effect of CHA Projects on Nearby Land Values."

Only two real-estate men alleged that property values had been hurt by CHA projects. One of these objections was raised by the manager of slum property and his testimony was openly biased, Miss Fabe reported. "The second objector had the counter-opposition of six other real-estate opinions in the area," she said. The other 32 real-estate men testified that, in their opinion, real-estate values around the projects had either not been affected by the projects or that the projects had had tremendously valuable and stimulating influences on near-by land and property values.

# Legal Notes and Decisions

Prepared by NATIONAL INSTITUTE OF MUNICIPAL LAW OFFICERS
Charles S. Rhyne, General Counsel

### Airports—Water Tower in Approach Zone—Injunctive Relief Denied

In action to enjoin maintenance of water tower near private airport, held that where town's need for tower exceeded importance of airport and evidence failed to show interference with approach zone to airport, held that injunctive relief would be denied. *Roosevelt Field, Inc. v. Town of North Hempstead*, 88 F. Supp. 177 (U. S. D. C. E. D. N. Y., Jan. 11, 1950).

### Beer—Sale of on Sunday Prohibited

In action to have ordinance prohibiting sale of light beer at retail on Sunday declared void, held that such ordinance was authorized under delegated state power. *Shaw v. Orem City*, 214 Pac. (2d) 888 (Utah, Feb. 20, 1950).

### Building Permits—Stand for Sale Of Farm Products—Ice Cream As

Where farmer sought permit to build stand on farm to sell dairy products and ice cream, held that farm products defined in zoning ordinance included dairy products and ice cream, and permit for such stand should be issued. *Drutschmann v. Board of Appeals of Canton*, 90 N. E. (2d) 313 (Mass., Feb. 7, 1950).

### Buildings — Demolition of Insanitary—Constitutionality Of Act Providing For

In action to have order condemning plaintiff's houses declared void, held that statute authorizing condemnation of insanitary buildings did not deprive plaintiff of property without due process and was not void for failure to establish standards to guide local board charged with enforcement of Act. *Keyes v. Madsen*, 179 Fed. (2d) 40 (U. S. App., D. C., Dec. 16, 1949).

### City Employees—Duty of Comptroller In Fixing Prevailing Rate of Wage

In action by maintenance men employed under civil service to tend buildings owned by City of New York against Comptroller to review his determination fixing prevailing rate of wage paid to workmen of same trade or occupation, held Comptroller should have included in his survey facts on wages of maintenance men performing comparable work for private transportation companies and should have permitted plaintiffs to show that maintenance men in apartment houses receive large amount of tips. *Flannery v. Joseph*, 89 N. E. (2d) 869 (N. Y., Dec. 29, 1949).

### City Employees — Wage Rate Same as in Private Industry

Where charter of City of San Francisco required payment to city employees of same rate of pay fixed for same craft in private employment under collective bargaining agreements, held that municipal bricklayers, while classified as pavers, were entitled to prevailing bricklayers' wage. *Randell v. Wolff*, 214 Pac. (2d) 58 (Cal. App., Jan. 31, 1950).

### Contracts—Breach of by City—Recovery by Contractor

Where city agreed with plaintiff to furnish dumping grounds for garbage collected by plaintiff under contract with defendant city, held that failure of city to provide dumping ground entitled plaintiff to recover the cost to which it was put as a result of city's breach of contract. *Frank Stamato & Co. v. Borough of Lodi*, 71 Atl. (2d) 336 (N. J., Feb. 14, 1950).

### Drainage Ditch—Flooding Causing Damages—City Liability

In action for damages and mandatory injunction to compel defendants to repair and maintain drainage ditch constructed in 1893 and abandoned in 1935, held that, since purpose of drainage ditch was to drain public highway, it was for public use and town could claim immunity from any prescriptive rights asserted by plaintiff. *Savoie v. Town of Bourbonnais*, 90 N. E. (2d) 645 (Ill. App., Feb. 24, 1950).

### Drainge Systems—Surface Water—Governmental Function

Where Court of Appeals certified question of whether maintenance by city of drainage system for surface waters was governmental function, held by Supreme Court that such activity was governmental rather than ministerial function. *City Council of Augusta v. Williams*, 57 S. E. (2d) 593 (Ga., Feb. 16, 1950).

### Elections—Removal of Name from Ballot—No Authority from Charter

In action for injunction to restrain Board of Elections of City of New York from including name of candidate on ballot for office of Councilman, held section of city charter authorizing summary inquiry into violation or neglect of duty in relation to property, government, or affairs of city did not authorize requested relief. *Linn v. Board of Election*, 93 N. Y. S. (2d) 860 (N. Y. Sup. Ct., N. Y. Co., October 30, 1949).

### Electric Wires—Municipal Liability For Injuries — Failure to Place at Required Height

In action for personal injuries on ground that city failed to maintain electric wires at sufficient height, held that city was not liable because of plaintiff's negligence in grasping wires, notwithstanding failure to place wires required distance from ground. *Coulon v. City of Alexandria*, 44 So. (2d) 171 (La. App., Jan. 4, 1950). *Reh. den.* Jan. 31, 1950.

### Eminent Domain—Zoning Ordinance Admissible to Show Value

In action by city to condemn land for purpose of widening state highway, held zoning ordinance showing property was zoned for commercial purposes was admissible, for it might affect the market value of property. *City of Tyler v. Ginn*, 225 S. W. (2d) 997 (Tex. Civ. App., Oct. 27, 1949). *Reh. den.* Nov. 24, 1949).

### Gross Receipts Taxes—Power of City to Impose

In action to recover penalties for failure to pay gross-receipts tax by telephone company, held that ordinance levying such tax was invalid as municipalities had not been granted power to impose such tax. *Village of Lombard v. Illinois Bell Telephone Co.*, 90 N. E. (2d) 105 (Ill., Jan. 19, 1950).

### Milk—Regulation of Plants Beyond City Limits—City Without Power

In action to enjoin interference with plaintiff's sale of milk in defendant city, held that local ordinance attempting to license and regulate milk plants located beyond city limits was invalid and beyond local power. *Dean Milk Co. v. City of Elgin*, 90 N. E. (2d) 112 (Ill., Jan. 18, 1950).

### Occupation Taxes—Louisville Levy Held Applicable to Federal Employees

Where city ordinance levied tax on privilege of engaging in occupations, trades and professions, held that employees of Federal government were not immune from liability and no burden was imposed upon the United States by such ordinance. *Cook v. Commissioner of Sinking Fund of City of Louisville*, 226 S. W. (2d) 328 (Ky. App., Jan. 17, 1950).

### Parking—Commercial Vehicles In Residential Zone

Where defendant parked six commercial trucks on lot in residential zone for three consecutive days, held that zoning ordinance of plaintiff city restricting use of garages in such district had been violated. *City of New Rochelle v. Lore*, 94 N. Y. S. (2d) 537 (N. Y., New Rochelle City Ct., Jan. 27, 1950).

### Parks—Dedication—Land Dedicated For Park Purposes Must be Used As Park

Where city acquired fee title to certain land for specific purpose of public park, held land dedicated to park purpose and city could not use it for different purposes. *Ash v. City of Omaha*, 41 N. W. (2d) 386 (Neb., Feb. 24, 1950).

### Pensions—Policeman's Death Occurring at Home

In action for pension by wife of policeman killed by son in policeman's home, held that death did not occur in performance of police duties and pension properly denied. *Benedict v. Board of Police Pension Fund Commissioners of Seattle*, 214 Pac. (2d) 171 (Wash., Jan. 18, 1950).

### Pensions—Recovery by City of Payments Illegally Made

Where defendant illegally received pension as widow of city employee, held that city was not barred by limitations and could recover such amount. *Powell v. Lawlor*, 95 N. Y. S. (2d) 193 (N. Y. Sup. Ct., N. Y. Co., Feb. 15, 1950).

### Religious Activities—Failure to Secure Permit to Preach in Streets

In action to review conviction under New York City Administrative Code for failure to secure permit from city police commissioner to conduct religious meeting, held that conviction would be affirmed as statute requiring permit from those desiring to preach in city streets was valid and designed to prevent breaches of the peace and riotous activities. *People v. Kunz*, 90 N. E. (2d) 455 (N. Y., Dec. 29, 1949).

### Streets — Use by City in Elevated Project — Interference with Light, Air, Access

In action to restrain use of street in connection with elevated highway on ground that use interfered with light, air and access of abutter, held that city had right to use such roadway without incurring liability where property of abutting owner was not damaged but was benefited. *In re Brooklyn-Queens Connecting Highway and Parks, Borough of Brooklyn, City of New York*, 90 N. E. (2d) 183 (N. Y., Dec. 29, 1949).

# Recent City Manager Appointments

**The following portraits are of city managers whose appointments have been announced in preceding issues of *The American City***

**John Oliver Hall**
**Pueblo, Colo.**

**G. W. Campbell**
**San Diego, Calif.**

**Frank L. Seymour**
**Montebello, Calif.**

**DeSoto B. McCabe**
**Park Ridge, Ill.**

**Ira D. S. Kelly**
**Newton, Kans.**

**R. F. Baumberger**
**Superior, Wis.**

**Austin M. Hancock**
**Abilene, Texas**

**Alfred E. Peloquin**
**Castleton, Vt.**

**James J. Mott**
**Big Stone Gap, Va.**

**Harold W. Putnam**
**Thomaston, Maine**

**W. D. Toyne**
**Grand Junction, Colo.**

**Gerald D. Wilkins**
**Enid, Okla.**

**Charles R. Porter**
**Sherman, Texas**

**H. K. Hunter**
**Sunnyvale, Calif.**

**Harold R. Cheek**
**Lexington, Ky.**

PHILIP W. ANCELL has been appointed the first manager of Ashland, Va.

K. M. AVERILL, formerly a general contractor, has replaced CHARLES LEIGHTON at Haines City, Fla.

JOHN A. BAILEY is now manager of both Edgeworth and Osborne, Pa.

JOHN H. BENDER, former manager of Duncan, Okla., has become the first manager of Hobbs, N. Mex.

JAMES BIBB, who was an administrative assistant at Kansas City, is the new manager of Holton, Kans.

HARRY F. BRESSLER, manager of Milford, Del., has replaced S. C. MARVEL at Rehoboth Beach, Del.

S. CONGER BROWN, who was manager of Duncan, Okla., from 1947 to 1949, has become the new manager of Shawnee, Okla.

BENJAMIN T. CAMPBELL, assistant city engineer, has accepted the appointment as manager of Hazard, Ky.

GEORGE W. COFFEY is the new manager of Redondo Beach, Calif. Formerly he was manager of Redlands, Calif.

ROBERT COONRAD has been appointed the first manager of Cobleskill, N. Y.

S. E. COX, city clerk, is now acting manager of Cordele, Ga.

*(Continued on page 136)*

F. R. Cromwell, manager of Terrell, Texas, has replaced Charles Brazil at Taylor, Texas.

Harry Curry has become manager of Grafton, W. Va. Formerly he was an attorney.

George J. Forster became acting manager of Madison, Wis., when Leonard G. Howell left the first of August.

A. S. Graham, former mayor of Terrell, Texas, is the new city manager of that city.

Del Green, assistant manager of Abilene, Texas, has replaced J. W. Jeffrey as manager of Carrizo Springs, Texas.

Henry P. Griffin has replaced O. J. S. Ellingson as manager of Edinburg, Texas.

Robert A. Hancock has accepted the appointment at Randolph, Vt.

Jerry G. Haynes is the new manager of Mars Hill, Maine. Formerly he was a student.

Leonard G. Howell, manager of Madison, Wis., since 1947, has accepted the appointment as first manager of Des Moines, Iowa.

Virgil C. Knowles, manager of Holton, Kans., has become the first manager of Sidney, Nebr.

Angus MacPherson has accepted the appointment as first manager of Great Bend, Kans. Formerly he was superintendent of a construction company.

Joe McClendon is now acting manager of Lufkin, Texas. He replaces J. B. Early.

Maynard T. McGurn is the new manager of Green Cove Springs, Fla.

Thomas F. Maxwell, former manager of University City, has accepted the appointment as first manager of Columbia, S. C.

A. J. Mulvihill is the new manager of Lebanon, Mo. He replaces Bertill Johnson, who has been manager since 1948.

Arlie Robison, of the Cincinnati Gas and Electric Company, is the new manager of Celina, Ohio.

Charles F. Schwalm is the acting manager of Hamilton, Ohio.

Jack D. Stickley, student, is the new manager of Cherokee, Okla.

Jack A. Taber, manager of Milwaukie, Ore., since 1947, is the new manager of Tillamook, Ore.

Charles H. Tucker, manager of Oakland, Maine, in 1947 to 1948, is the new manager of Calais, Maine.

Robert C. Violette, manager of Franklin, N. H., has replaced Leon E. Fitts as manager of Newport, N. H.

Donald J. Waring has replaced Robert E. Layton as manager of Randolph, Vt.

Clarence E. Ridley, *Director*
*International City Managers' Association*

### Correction

**In the July issue of *THE AMERICAN CITY*, Mr. John C. McDonald was listed as having received the appointment at Rockville, Maine. The new city manager is John G. McDonald, and he is the manager of Rockville, Md.**

# The Municipal Bond Market

## Notes to Be Read in a Hammock

By CATHERINE CLARK
*Municipal Service Department*
*Dun and Bradstreet, Inc.*

THE usual midsummer lull in municipal borrowing is thus far invisible to the naked eye, but the midsummer lull in profound analysis of that borrowing has developed as expected. The market may be going to pot (it isn't, really—the *Bond Buyer's* index of the yield on 20 municipal bonds was 1.91% on July 27, setting a new low yield for the year). But who cares, as long as the Week-enders' Special leaves Grand Central at 3:30 Friday afternoon? It seems a good time to catch up on some recent oddities of municipal finance.

●

Probably the oddest of these is the story of the Chicago Transit Authority's equipment-trust certificates. The Transit Authority applied to the Reconstruction Finance Corporation for a $15,000,000 loan to finance the purchase of new equipment, the loan to be secured by equipment-trust certificates. The application was rejected by the RFC, with no official explanation; however, the fact that the equipment-trust certificates would be subordinate to the CTA's outstanding bonds appears to have been the reason for the rejection. In view of the developments in the Lustron case at that time, the Chicago newspapers found plenty of material for editorials.

The twist in the story developed about two weeks later, when it was announced that John Nuveen and Company, Chicago investment bankers, had agreed to loan the CTA $11,000,000, taking as security precisely the same kind of equipment-trust certificates the RFC had not been willing to accept. Seems as if there's life in that old gal—private enterprise—yet.

●

Many cities, nearing their debt limits or unwilling to put a further burden on property taxes, must be following with interest the innovations made in municipal borrowing by St. Petersburg, Fla. In April of this year that city, which already had water-revenue, gas-revenue, transportation-revenue, and hospital-revenue certificates outstanding, sold an issue of $2,150,000 utility-tax-revenue certificates. The certificates are payable solely out of excise taxes imposed by the city on utility services furnished and sold within the city, in the amount of 10% of charges for such services. The certificates, which mature serially through 1955, were sold at a net interest cost of 2.09%.

Having successfully carried off this new departure in municipal finance, St. Petersburg on July 12 offered $250,000 radio-revenue certificates for sale. These certificates, maturing in equal annual installments from 1951 through 1960, were to be payable solely out of the net revenues of Radio Station WSUN, owned by the City of St. Petersburg. The city agreed, by resolution, "to fix and charge a schedule of rates and charges for the use of the facilities of the said radio station by lease, contract, or otherwise, sufficient to insure adequate revenues to provide funds for the payment of the reasonable cost of maintaining and operating the said radio station under economical management, for the making of necessary renewals and replacements thereto, for the payment of any taxes which may be lawfully levied thereon, and to provide a Sinking Fund sufficient for the payment of the interest upon the certificates and to pay the principal thereof at maturity, as well as to pay the principal and interest of all other certificates or obligations payable from said revenues."

The next development in the case of the radio-revenue certificates was the report on July 13 that "no bids were received." There was no amplification of the bare statement at that date, and it remains to be seen whether this is the unhappy ending of the story or just the dark hour before dawn.

●

Occasionally, even in these days, a school-bond issue is turned down. To those cities and school districts that have had this unhappy experience, a summary of the procedure used by a school district which shall be nameless may be useful. This district always holds its bond elections in the summer, when a large proportion of the property holders who pay the heaviest taxes can be counted on to be away. The election is then held in the school which is to be improved or whose overcrowding is to be relieved by construction of a new school. The scheme may not be foolproof, but there is no record of a bond issue voted down in this district.

●

New York City's water shortage, now happily less acute than earlier in the year, has received wide attention, but another aspect of the city's water-supply system might never have come to light had not a small school district in the foothills of the Catskills needed a new school. The district, with an estimated population of 2,000 and a school enrollment of 236, decided to sell $795,000 building bonds early this year. A per capita debt of $400 is pretty high, even if the dollar ain't what it used to be, but the district was able to obtain a 2¼% coupon for bonds maturing over 30 years. The gimmick? Well, the district has an assessed valuation of $10,500,000, of which about 80% represents property owned by New York City. In developing the Delaware watershed area, New York City's Board of Water Supply has earned the gratitude of future scholars (and taxpayers) of Neversink Union Free School District No. 1.

A small section of the "old" filing area at the Bureau of Land Management, Dept. of Interior, Washington, D. C.

## To eliminate wear and tear — and speed up reference

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**At the Bureau of Land Management** you'll see row after row of heavy bound volumes containing the deeds for every parcel of public domain land granted to the citizens of the United States since 1788.

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**It will be a different story,** however, when Recordak microfilm copies of the original documents are available. *Then,* wear and tear on the originals will be halted . . . reference will be much faster. Clerks will have at their finger tips the contents of 11,500 bound volumes—in just ten six-drawer cabinets—ready for immediate review in a Recordak Film Reader, which enlarges each film image to nearly twice the bound volume size.

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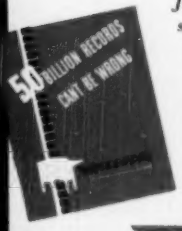


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# RECORDAK

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new york improves transit service with

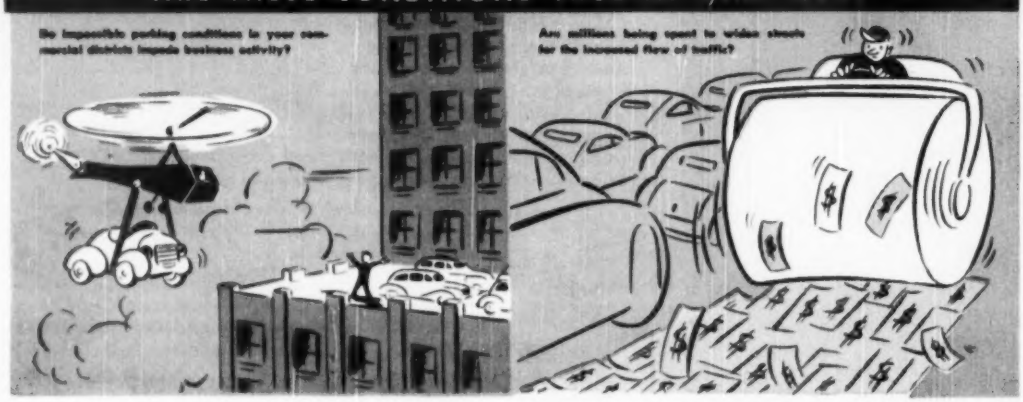
# MODERN ELECTRICS

Traffic problems caused by increased use of automobiles can be solved only if we move people more efficiently. Modernization and expansion of rapid transit systems will help alleviate these traffic problems, because *one 2-track transit line can carry the same number of people as eight 4-lane highways, crammed with automobiles!*

In this light, the New York Board of Transportation is pleased to offer improved service to riders of the Flushing rapid transit line. Five and one half minutes have been chopped from schedules of the local trains, and four and one half minutes from the express schedules. This improved service results from our complete modernization of the new line with modern electric rapid transit cars.

*Colonel Sidney H. Bingham*
*Chairman*
*New York Board of Transportation*

ARE THESE CONDITIONS TRUE IN *Your* CITY?


Do impossible parking conditions in your commercial districts impede business activity?
Are millions being spent to widen streets for the increased flow of traffic?

Your city is probably suffering from traffic congestion, blight conditions and heavy street widening costs. Sound transit planning may provide an answer in your city. Electric vehicles on your trunk lines attract more riders because of their comfort and speed. They please transit management because of their low cost of operation. A healthy transit system means better service, more public support. Write us. We would like to help you. *Apparatus Department, General Electric Company, Schenectady, N. Y.*

GENERAL ELECTRIC

# Traffic Control and Facilitation

## Spring-Operated Automatic Portable Traffic Signal

Traffic signal run by a spring-wound motor.

NEARLY every municipality has intersections where a traffic signal would be convenient to have for a little while once or twice a day but would otherwise be an impediment or a waste. These locations usually do not have any traffic signals at all. The spots of temporary congestion are at schools, churches, factories, stadiums, beaches and wherever special gatherings take place.

Signs and manually operated semaphores and the like are not good enough, and if "manually" operated there are expensive manhours to pay for. What was needed is a modern automatic portable traffic signal. This need appears to have been met, and many communities are now using the new signal. These communities are reported to include Tell City, Ind.; Henderson, Ky.; Ardmore, Okla.; Casa Grande, Ariz.; Grand Prairie, Tex.; Salina, Kan.; Boulder, Colo.; Cheyenne, Wyo.; Mitchell, S. D.; Great Falls, Mont., and the California towns of El Monte, Montebello, Redondo Beach, Selma, Torrance and Whittier.

The unit is completely automatic. Within its frame is a revolving drum which is Scotchlite-lettered 'STOP,' 'CAUTION' and 'GO.' The drum is actuated by a specially designed spring-wound motor. One winding suffices for a full day. A clock movement used in connection with the motor gives the timing. This mechanism can be adjusted to give timing increments such as 20-20 seconds, 30-30 seconds, or 20-40 seconds of the drum rotation. The unit is completely operated on ball-bearings throughout. The mechanism is hardened, cad-plated, and weather-sealed to ensure against rust and corrosion.

The stand of 3¼-inch tubing with an inner tubing of 2⅞ inches, can be telescoped downward or upward; maximum height is 7½ feet; minimum height is 4 feet. The base is 24 inches in diameter, and its 85-pound weight brings the center of gravity near the pavement. It cannot easily be upset. The unit rolls on dollies to any location.

Designed and built by the Peters Metal Products Company, 230 Acacia Avenue, Hawthorne, Calif., primarily for the protection of school children, this signal is being increasingly installed for general pedestrian protection where permanent signals and paid guards are economically impractical.

## 200 Trafficones on Streets at One Time

THE City of Wichita now owns approximately 250 Trafficones, which are used in pavement-marking operations. As many as 200 of these cones have been used on the streets at one time. They have been very effective in keeping traffic from running over wet-paint lines. These flexible cones are also used occasionally when other traffic improvements are made on streets, but their major use is in the summertime during pavement-striping operations. One other advantage of these Trafficones is that they can be nested very easily and a great many carried in a small space. They are easy to set out and easy to pick up.

George Fisher, Traffic Engineer of the Public Works Department of Wichita, Kans., examines one of the "witches' hats" used by maintenance crews when repairs are being undertaken. The real name of this popular safety device is Trafficone, made by the Enterprise Development Corporation of Burbank, Calif.

GEORGE J. FISHER
*Traffic Engineer*
*Wichita, Kans.*

## *Detroit Jails Reckless Drivers*

THAT ordinances already existent in many municipalities have only to be enforced to reduce traffic crashes, fatalities, and disorder, is being shown in the case of Detroit. In the 12 days from May 7 to May 19 more than 120 reckless drivers were sentenced to jail. Only one traffic fatality occurred during that period against nine that were due by past experience.

Those jailed were apprehended while driving 15 miles or more above the official speed limit, or were under the influence of liquor, or driving recklessly under the state law. Sentences ranged from 5 to 60 days, and suspension of drivers' licenses for a minimum of 60 days.

The campaign has lifted the morale of police officers, according to Judge John D. Watts. He says they no longer fear that the speeders they sometimes risk their lives to arrest will be discharged by the court.

# Joe Prismo PIONEER-

# put GLOW in them thar hills!

He's the boy who pioneered better Life-Lines on the roads of America. Up hill and down dale, in the towns and cities, Prismo's reflective coatings have made driving safer for millions. The Prismo Laboratories have made constant improvements in reflective coatings, pioneering in better methods of application. By cutting costs through new techniques and materials, Prismo's life-saving glow is "lighting-up" road after road all over the world.

Prismo's exclusive plastic binder and crystal clear Prismo spheres last longer . . . much longer. Test after test proves conclusively that the "long-lasting center-line" on any highway is the Prismo Life Line.

Write today for fully informative bulletins on the many uses of Prismo, the sphere of safety.

THE SPHERE OF SAFETY

## PRISMO SAFETY CORPORATION

Huntingdon, Pennsylvania

# Maintaining Traffic Speed in Los Angeles

IN 1949 there were 912,175 motor vehicles registered in Los Angeles; 52% more than in 1937. In 1949 there were 683,534 vehicles moving in and out of the central district in 13 hours; 16% more than in 1937. In this same period, the average annual mileage per vehicle throughout the State of California increased 78%.

Traffic conditions in downtown Los Angeles in 1937 were "critical." How, then, was an increase of 16% in volume ever accommodated on the same streets? The answer is through getting the most use out of the existing streets. This has involved extension of parking restrictions, prohibition of truck loading during peak hours, the use of one-way streets, the abandonment of streetcars in favor of buses on many streets, and certain improvements in signal timing. By far the most important of these are the first two.

The effect of these traffic-engineering methods is attested to by speed studies conducted in 1937 and again in 1947, for average speeds are the best measure of traffic congestion. In these studies, a "floating car" was used, traveling each street for many days, at all hours, at the same pace as the general flow of traffic. The time elapsed for each run on each street was noted and the average speed computed. The 1937 study showed the average speed was 13.9 miles per hour throughout the Central Traffic District. The 1947 study showed an average speed of 13.3 miles per hour in the same district. This maintenance of average speeds at approximately the same level, accomplished in the face of vastly increased volumes, is attributed in large part to the freedom of movement and increased roadway space provided by prohibition of parking and curtailment of loading.

### Parking

It is necessary to consider two phases in handling the parked automobile. The first phase is the regulation of the vehicle at the curb in order to preserve traffic movement, while the second is the preservation of adequate off-street parking facilities in order to preserve the function of the automobile by providing it a terminal at its destination.

In this latter instance, a recent court case has been noted with interest. The City of Beverly Hills passed an ordinance prohibiting parking lots in the rear of business buildings which front on Wilshire Boulevard. Pressed by the need of adequate off-street facilities, a department store sought an injunction to prohibit enforcement of the ordinance. In a lengthy opinion, Circuit Judge Swain granted a permanent injunction stating "A city cannot by its power to zone, which is part of its police power, prohibit a use which is not a nuisance and which is indispensable. The zoning power of a city is a power to establish —not one to destroy that which is for the general welfare of a city."

It is therefore established that parking on a street is a nuisance when it interferes with the exercise of basic rights, such as the right to travel upon the street or the right of access to property. It has, on the other hand, been established that the parking of an automobile on a private facility set aside for that specific purpose is not a nuisance but is, in fact, quite indispensable.

A clear pattern is therefore set down for all persons in a position of responsibility. The logical continuation of the legal thought in this matter must clearly show to the public official that he has a high degree of responsibility in placing adequate safeguards for travel through proper parking regulations. Such a thought may even raise the question in the future as to whether or not responsible officials are guilty of misfeasance in office for failure to do so.

R. T. DORSEY
*Traffic Engineer*
*Los Angeles, Calif.*

# Parking Meters Must Be Policed

TO OBTAIN some indication of how effectively the city's metered on-street parking space is used, a one-day hourly survey was made in a four-block area of Seattle, Wash. In this area there are 109 meters with a total of 828 legal space hours available during the day. The survey showed that:

1. There were nearly as many cars illegally parked in meter spaces at one time as were legally parked.

2. The 142 cars parked over the legal time in this four-block area kept 313 additional cars from being provided the one hour of short-time parking to which they were entitled.

3. The average turnover per meter was 4.3 cars. Had there been no illegal parking, a turnover of 7.6 cars would have been possible.

4. Although 85 red "violation" flags were noted on the hourly checks, only one parking ticket was found. Evidently there were no tickets given to "nickel feeders"—and there were 44 of them parked at meters for three to eight hours each.

What effect have parking-meter violations in the entire downtown area with a total of 2,519 Dual meters and Park-O-Meters?

Applying the figures from this survey to all metered parking spaces, if there had been no violation of the one-hour limitation of parking at the metered curb spaces in the downtown business area, over 7,000 additional short-time parkers could have been accommodated during the day.

The worst offender is not the individual who parks his car, deposits a nickel, and overstays his hour by 15 minutes or a half-hour—although he is the one who gets the "red flag" and stands the chance of getting a $1 "violation" ticket.

The real offender is the individual who parks his car from two to eight hours a day, returning on the hour to feed the meter another nickel. Regular "nickel feeders" are undoubtedly persons connected with the business establishments or professional offices in the area.

It probably has not occurred to them that by monopolizing a near-by parking meter they are keeping their own customers and clients from being accommodated, and as a result are directly harming their own business. "Nickel feeding" has, in fact, become quite a systematic business. In some offices, secretaries are provided with a stock of nickels for buying time for the bosses' car.

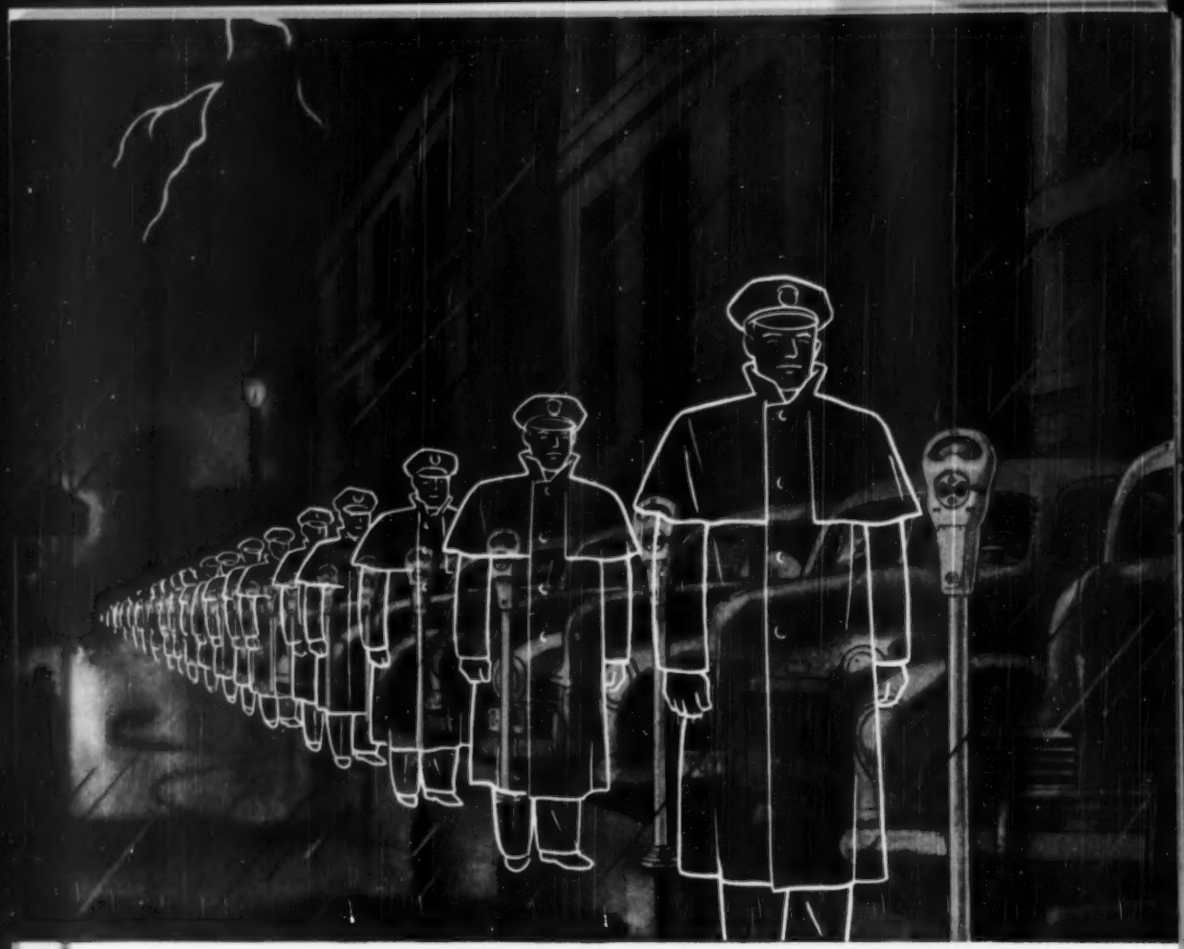
## *It's Transit That Limits A City's Growth*[1]

NEW YORK CITY'S No. 1 problem, second only to war and peace, is transportation, Dr. Luther Gulick told the convention of the League of Women Voters of New York City on May 23.

I strongly suspect that the limiting factor, not only for growth, but for the maintenance of a high level of income, production and of the good life in this area, is found in transportation pure and simple.

We are already stifling our manufacturing businesses, our merchants, our commerce and our amusement activities by traffic congestion on and under the streets. We are already stretching out the working day, portal to portal, for all our people by approximately 45 to 100 minutes more than it need be.

Even an expenditure of, say, $3,000,000,000 to $5,000,000,000 for transit, traffic, street, and freight improvements, and housing located to prevent needless traffic, would probably pay out in a very few years, and at the same time preserve some $5,000,000,000 of downtown values which may otherwise disintegrate.



# ADD THESE SILENT POLICEMEN TO YOUR FORCE

**. . . you *DON'T PAY THEM* . . . they pay you and they're on the job in *ANY WEATHER***

Yes, in driving rain or swirling snow these sturdy sentinels faithfully perform their task because they are engineered for *all* weather conditions. No wonder, then, that Anchorage, Alaska, selected Park-O-Meter . . . nor that blizzard-bound New England towns overwhelmingly prefer Park-O-Meter!

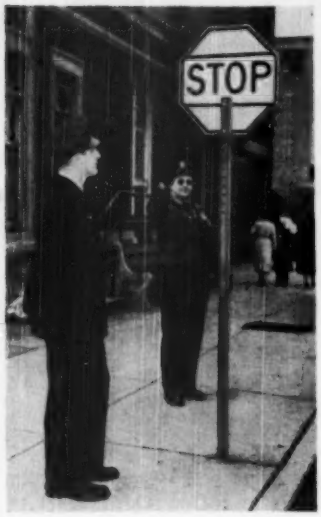
Says Police Captain Harold A. Smith of Allentown, Pa.: "The sturdy Park-O-Meter mechanism is fascinating; gets into your blood like police duty! We have added 1200 silent policemen to our force . . . in my opinion Park-O-Meter is the finest yet developed for the control of curb parking in any weather."

Yes, Park-O-Meter is the all-weather meter with instant adjustments for all conditions. Adjusts to a score of time-coin combinations! Completely *automatic* in action! Your community will like this all-new, postwar meter. *Write now for details.*

*Ask to see the new 10-hour Park-N-Lot Model*

*Magee-Hale*
**PARK-O-METER COMPANY**
Commerce Exchange Bldg.
OKLAHOMA CITY 2, OKLAHOMA

## *Two-Way Stop Sign in Gary, Ind.*




**The two-way stop sign, which provides clear visibility in both directions.**

*To the Editor of* THE AMERICAN CITY:

HERE is a photograph of a combination near-right far-left sign which provides double the signal value of the single-face near-right sign so widely used at present. The picture shows how the post is attached to the back of the sign.

This sign, which I have not patented, looks much the same as the conventional signal with the addition of reflectorized stop strips on both sides. Clear visibility is provided in both directions. Two of these two-way signs will serve at an intersection.

CHARLES J. WALKER
*Traffic Engineer*
*Gary, Ind.*

## *Interconnected Signals For New Orleans*

GENERAL improvement of the traffic-signal system of New Orleans, La. (population 500,000), began shortly after the establishment, in 1946, of the Traffic Engineering Division in the Department of Public Safety.

An interconnected progressive traffic-signal system has been installed in the central business district. The system covered 39 intersections, and six additional intersections have been equipped with new signals for a total of 45 intersections. Another improvement in reducing delays was the abolition of parking in 975 spaces on downtown streets, and the absolute prohibition of stops for loading on the side of the street.

Some of the intersections in the interconnected system required individual attention. For instance, one at Canal Street and University Place provides for a special left turn, pedestrian, and street-railway intervals in addition to the normal red, amber, and green sequence. Traffic-actuated signals have been installed at isolated intersections, and a volume density system is now being planned for one of the principal arterial streets.

KENNETH M. KING
*Director*
*Division of City Traffic Engineering*
*New Orleans, La.*

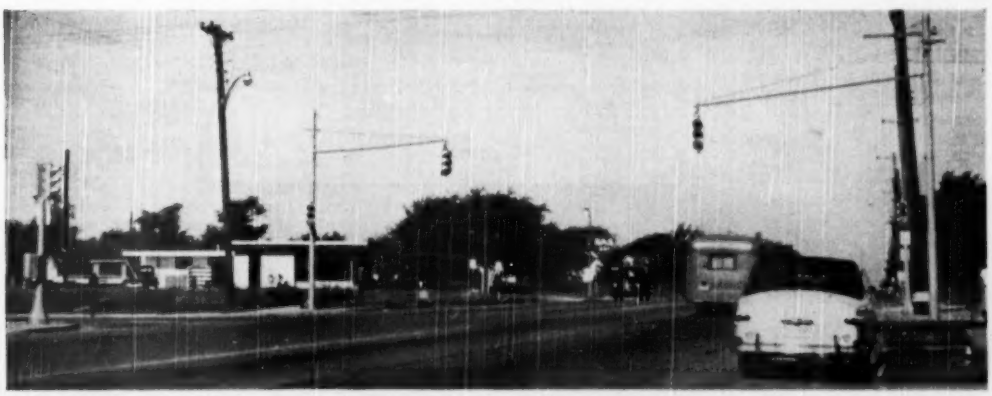
# Double Signalization in Wichita, Kans.

THE traffic signal at the intersection of Kellogg and Oliver Streets in Wichita, Kans., shown here, is more or less a special installation to take care of both a wide street and fast traffic. The photograph aids in understanding that there are three signal indications for east-west traffic and two for north-south traffic. The reasons for the three east-west indications are the width of Kellogg and the speed of traffic using the street.

Even with such a special traffic-signal installation, several motorists have still had accidents because of running the red light.

Because of the large increase in traffic on the streets of Wichita, and since the budgeted funds would not permit the purchase of necessary signals to take care of this flow, the City Commission approved a project whereby intersections could be improved by signalization and the cost paid by street-improvement bonds. Ten such intersections have been signalized. As with all other new signals in the City of Wichita, these signals have two indications for each direction of traffic and are corner-mounted. It is expected that five or six additional signals will be erected in the city in 1950. These latter signals will be paid for by budgeted funds.

GEORGE J. FISHER
*Traffic Engineer, Wichita, Kans.*



**Three traffic-signal lights east and west, two north and south, supplied by Eagle Signal Corporation, Moline, Ill., and purchased out of the street-improvement bonds issued by the City of Wichita, Kans.**

# JOSLYN
# SENIOR LUMINAIRE

## PROVIDES IMPORTANT NEW ADVANTAGES FOR YOUR STREET LIGHTING SYSTEM BECAUSE IT HAS BEEN ENGINEERED FOR

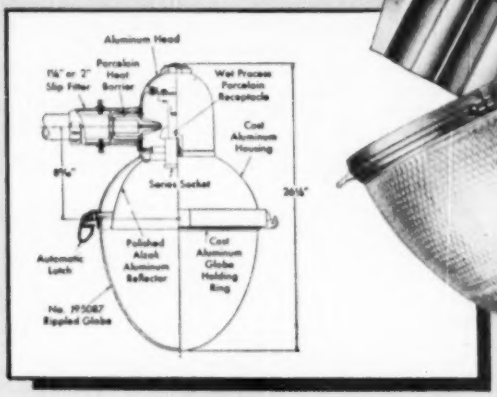
**LUMINOUS EFFICIENCY**

**MECHANICAL and ELECTRICAL DURABILITY**

**CONVENIENCE OF OPERATION**

1. For high intensity illumination—ideally suited for 10,000 or 15,000 lumen series or multiple incandescent Lamps. Also, for Type E-H1, 21,000 lumen or Type F-H1, 16,000 lumen Mercury Vapor Lamps.
2. Sturdy cast aluminum head and reflector housing.
3. Highly polished heavy gauge Alzak* Aluminum enclosed Reflector.
4. I.E.S. Types IV or V Light Distribution; especially suited for wide city streets.
5. All features liberally designed to minimize heat concentration.
6. New design of Slip Fitter—with strong 2-bolt clamp and aligning set screws—stainless steel bolts and screws—streamlined contour—blends gracefully into pipe bracket—available for either 1¼" or 2" pipe.
7. Includes the well-known Joslyn hinged automatic latching glassware which facilitates re-lamping from the ground.
8. Available with slip fitter or top-mounted head, for inner wiring and with Wet Process Series, Dry Process Series Receptacle or Mogul Multiple Socket.

*Mfg. under Aluminum Co. of America patents.





...s in principal cities.

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THE SOUTH EAST JOSLYN CO
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JOSLYN MFG. AND SUPPLY CO.

*Complete Pole Line Equipment*

30 NORTH WACKER DRIVE, CHICAGO 6, ILL.

# St. Pauls's White Way of Flush Building-Front Lights

WHEN St. Paul, Minn. (population, nearly 300,000), turned on its new downtown shopping-district street lights in April 1950, it gained the distinction of having one of the brightest downtown districts in the United States.

In addition, it became the only city in the world equipped with unique building-front lights, conceived by its own lighting engineer.

Altogether, 222 of the new lighting fixtures on 22 street-facing blocks are illuminating St. Paul's streets with a glareless white light 10 times brighter than before.

The entire program—which took nine years to develop, but could be developed now in as many months—cost less than $100,000 for the 22 blocks lighted. This cost was met by a special tax assessment on the business firms benefiting from the new lighting system.

The new lights—minus posts or brackets—are attached flush to the front sides of downtown buildings, 26 feet high above the street level. From their building-front locations, the lights—installed opposite each other on both sides of the street—spread their directed beams of light across and up and down the thoroughfares.

## Streets Covered with Soft Light

From St. Peter to Sibley on 6th and 7th streets, or from 8th to Kellogg on Robert and Waubasha, the streets are covered with soft white light throughout the city's shopping district. The light's non-glaring effect is due to the special design of the lens, which spreads the light beam over the entire street and sidewalk area. The curb-to-curb width of 6th, 7th, and Waubasha Streets is 40 feet; of Robert Street, 48 feet.

The new lights have replaced gloomy, shadow-producing lights on many of their shopping thoroughfares. Motorist and pedestrian traffic now moves in comparative safety, while the merchants are pleased that their demands for better lighting conditions and removal of obsolete lamp posts have become a reality.

Work on St. Paul's new shopping-district lighting began in 1940. At that time, downtown merchants were clamoring for long-range improvements in the city's shopping district.

How St. Paul's refracting lens looks.

Taking their problems to the St. Paul Association of Commerce, the businessmen demanded wider sidewalks, wider streets, better street-lighting conditions, and the complete removal of street-lamp posts.

They suggested that all this could be accomplished by bracketing the lights to the sides of the buildings, thus removing the posts for future street and sidewalk improvements. City engineers, however, pointed out that many of the city's buildings would be inadequate for securing the street-light brackets.

## Development of Specially Mounted Light

Harry C. Streich, city superintendent of lighting and electrical engineering, however, envisioned a different approach to the problem. He suggested the development of a special light that could be mounted directly to the build-

Glareless, well-lighted 6th Street, its luminaires flush with building fronts.

● Here's L-M's single-curve upsweep bracket without scroll, for an absolute minimum of pole space. Heavy channel brace and strong steel pole plate give plenty of support. In 4′ and 6′ extensions, 2′ and 2′ 6″ rise. See details on Page 3 of Bulletin SA-1, offered below.

# INCREASE THE MOUNTING HEIGHT...

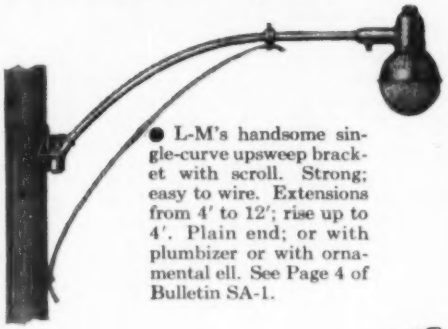
## take LESS POLE SPACE...with

# L-M brackets and mast arms

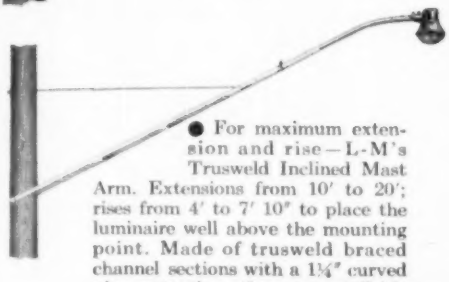
There's a growing recognition, among engineers, of the need for higher mounting for street lighting luminaires. There's also a growing demand for pole space. L-M meets both requirements with these brackets and mast arms that put the luminaire up higher, yet require a minimum of pole space.

The graceful sweeping design of the brackets adds daytime beauty to installations using them. The design, materials, and fabrication of brackets, arms, and mountings assure ample strength, with a high safety factor. These brackets will stay where you put them!

They are easy to install, and can be relocated if necessary. Wiring is simple. The long radius curves give complete protection to cable by avoiding stresses caused by short-radius turns and sharp corners.



● L-M's handsome single-curve upsweep bracket with scroll. Strong; easy to wire. Extensions from 4′ to 12′; rise up to 4′. Plain end; or with plumbizer or with ornamental ell. See Page 4 of Bulletin SA-1.



● For maximum extension and rise—L-M's Trusweld Inclined Mast Arm. Extensions from 10′ to 20′; rises from 4′ to 7′ 10″ to place the luminaire well above the mounting point. Made of trusweld braced channel sections with a 1¼″ curved pipe extension, they are available for all types of wiring construction. See Pages 10 to 12 of the Bulletin for these and other mast arms.

### Get the Whole Story

Pictures, diagrams, and details of these and many other brackets and arms are available in L-M's Bulletin SA-1. Ask the L-M Field Engineer for your free copy or write Street Lighting Department, Line Material Company, Milwaukee 1, Wisconsin (a McGraw Electric Company Division).

## LINE MATERIAL...Street Lighting

ing's walls, without the need for brackets.

By mid-1941 Mr. Streich was ordered to proceed with plans for installing his building-front lights on the city's downtown shopping-district streets.

Getting his idea off the blueprints and into the manufacturing stage was the first step.

Engineering consultants were asked to study the possibilities. Several sample Refractolens,[1] fixtures of small size but of optical characteristics similar to those considered necessary to do the job, were actually installed on buildings and the results studied. It was agreed that a design could be made which would use a larger lamp and be successful.

## Perfection of Rough Plans

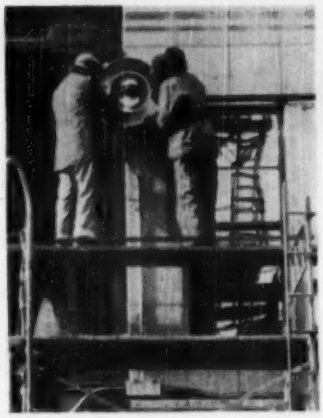
General Electric's illuminating laboratories studied fixture possibilities and perfected Streich's rough plans. In July 1948, final plans were approved by Streich, and the manufacturing order was placed.

General Electric's factory in Lynn, Mass., immediately began production of the special fixtures. Made of ¼-inch aluminum, each unit was cast in a rounded shape with a diameter measurement of 23¼ inches and a depth of 13 13/16 inches. A highly polished aluminum reflector was mounted inside the unit along with the necessary bulb attachments. Four 9/16-inch-diameter mounting holes were drilled in each unit's rear cover to accommodate bolt fastenings during installation.

Coinciding with G. E.'s work, Holophane's Newark, Ohio, plant, designed and began fashioning the refracting lens for each unit. The refracting lens redirects light from the reflector and direct lamp light into a beam pattern up and down the street, with cut-off slightly above the opposite curb line.

[1] T. M. Reg. Holophane Co., Inc.

**"Scotch" electrical tape is specified in wiring the lights. Here a splicing job is done on wires in a junction box.**



**This is the installation of a building-front luminaire 26 feet above ground level. It is shown without its Holophane refractor, which directs the light downward onto the street surface. There are 222 of these General Electric luminaires with 750-watt incandescents spaced 60 to 75 feet apart, opposite.**

Each consists of a double-refracting lens which meets the exacting optical requirements and is resistant to heat and shock. The completed lens, of 20-inch diameter and 6¾-inches deep, is mounted in a door hinged to the aluminum fixture, and held by four wing-bolt cushioned clamps. The entire unit, with lens attached, measures only 13 13/16 inches from the back to the peak of the lens curvature.

Meanwhile, St. Paul's Commonwealth Electric Company contracted to prepare the necessary wiring, and to install the new luminaire units when delivery was made.

Beginning in August 1949, four wiring crews began to install junction boxes, relay circuits, and control cabinets throughout the city's downtown shopping district.

At this point, another new development in electrical equipment came into play—splices on all connections were made with the new vinyl plastic "Scotch" brand electrical tape, introduced just after the war by Minnesota Mining and Manufacturing Company, St. Paul.

## Streich Specified Splice with New Tape

According to George W. Miller, supervising engineer for Commonwealth Electric, Mr. Streich specified the use of the new No. 33 electrical tape in order to take advantage of its single-warp insulation protection and the compactly-tight splice afforded by its 7-mil thickness on previous electrical installations. The tape is rated by Underwriters' Laboratories, for temperatures up to 176°F.

By December 1949, all wiring had been completed, and the entire 120-volt AC circuit was connected to the main control panel. From this panel, separate remote-control relays were set up for all-night and midnight circuits.

## Installed Last February

Installation of the luminaire units began last February, and was completed in March. The first step was to drill four 9/16-inch holes in the building-front's masonry, corresponding with the four holes in the back of each lighting unit. Open-end stud bolts were inserted into the holes and the aluminum fixture bolted on. Then the electrical connections were made to the unit, and a 750-watt incandescent lamp inserted. The final steps included the cleaning of the lens and reflector, and anchoring the lens unit in place.

## The Lights Installed

All of St. Paul's 222 building-front lights are mounted 26 feet above the sidewalk level, and three-fourths of the installations are spaced 75 to 90 feet apart. The other one-fourth are spaced 60 to 75 feet apart and run the length of 7th Street between Waubasha and Jackson Streets. There are 170 lighting units mounted 10 to a block on 17 blocks; 48 units 12 to a block on four blocks; and four units on one side of one short block.

The units spread a directed beam of light to the street level, with an illumination intensity average per block of approximately 2.5 footcandles. The single 750-watt bulb in each unit provides up to 15,600 lumens, and is designed for 1,000-hours use. The old fixtures, eight to a block—installed in 1905—produced about one-tenth as much illumination as the new installation.

The retail merchants requested a survey by a private firm of architects and

**Harry C. Streich, Superintendent of Lighting and Electrical Engineering, with a roll of "Scotch" electrical tape.**

# CROUSE-HINDS

# Dust-Tight Traffic Signal

## gives you an optical system that *remains* CLEAN *inside*...

**• Greater light output**
**• Increased visibility**
**• Lower maintenance**

You get all of these benefits when you install Crouse-Hinds Dust-Tight Traffic Signal . . . the signal with the optical system which retains its peak efficiency indefinitely, under all conditions of atmosphere and climate . . . the signal with the built-in barriers through which dust CANNOT PASS:

TWIN-RING MOLDED RUBBER DUST SEAL . . . especially designed to perform the vital function of resealing the optical system when it is opened for servicing. When the door is closed each of the two rings is compressed against the aluminum reflector ring, giving you not just one but two dust-repelling seals. It not only makes the optical system dust-tight . . . it also serves as a gasket for the lens. This vitally important seal is made of synthetic rubber with the proper degree of softness, molded in one piece . . . not extruded and spliced together. It will withstand temperatures 100 degrees higher than any encountered in the optical system . . . it will not become hard or brittle, nor will it become tacky and stick to any of the parts.

REFLECTOR RING . . . Half-hard aluminum 1/16-inch thick, formed to provide a flat, rigid surface against which the twin-ring dust seal is compressed. It is so shaped that the reflector gasket is held firmly in place.

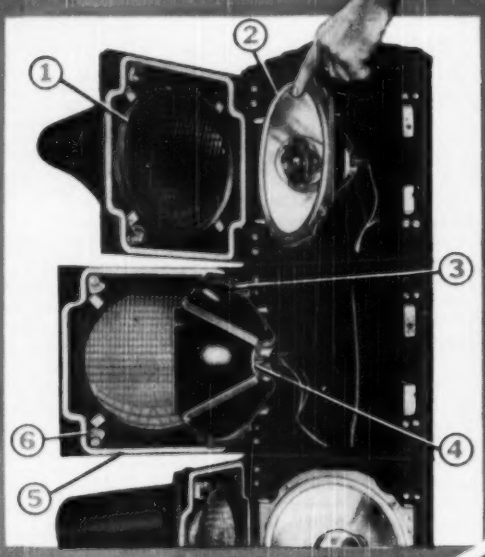
REFLECTOR GASKET . . . Cork, punched from a solid sheet . . . not spliced at any place. It fits tightly in the back of the reflector ring and will not fall out. This gasket provides a perfect seal against the ground edge of the reflector.

RECEPTACLE GASKET . . . Cork, punched from a solid sheet . . . not spliced at any place. It fits tightly around the smooth surface of the molded composition lamp receptacle, and is held firmly against the apex of the reflector by a metal washer.

RESILIENT DOOR GASKET . . . Cemented into the gasket groove of the door, and is closed against a raised bead on the signal housing. This gasket will not become hard or brittle, and retains its resiliency indefinitely.

TWO DOOR CATCHES . . . Two cam-acting lever catches which, when turned approximately 90 degrees, fasten the door securely, thus excluding all dirt, dust, and moisture. The cam-acting catches bear against the inner surface of the signal housing and lock the door tightly against the gasket.

The Dust-Tight Traffic Signal is built to Crouse-Hinds high standard of quality . . . from the finest materials, with painstaking care, by skilled craftsmen. Write for additional information on this outstanding development in the traffic engineering field.

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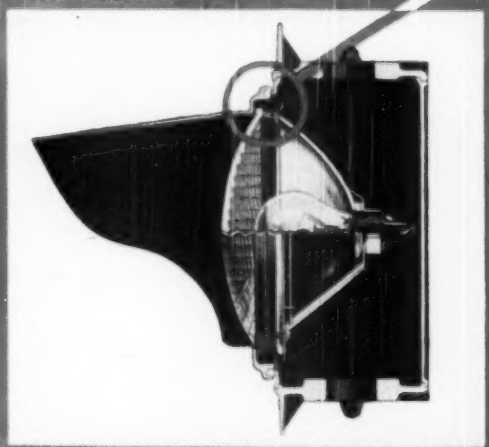
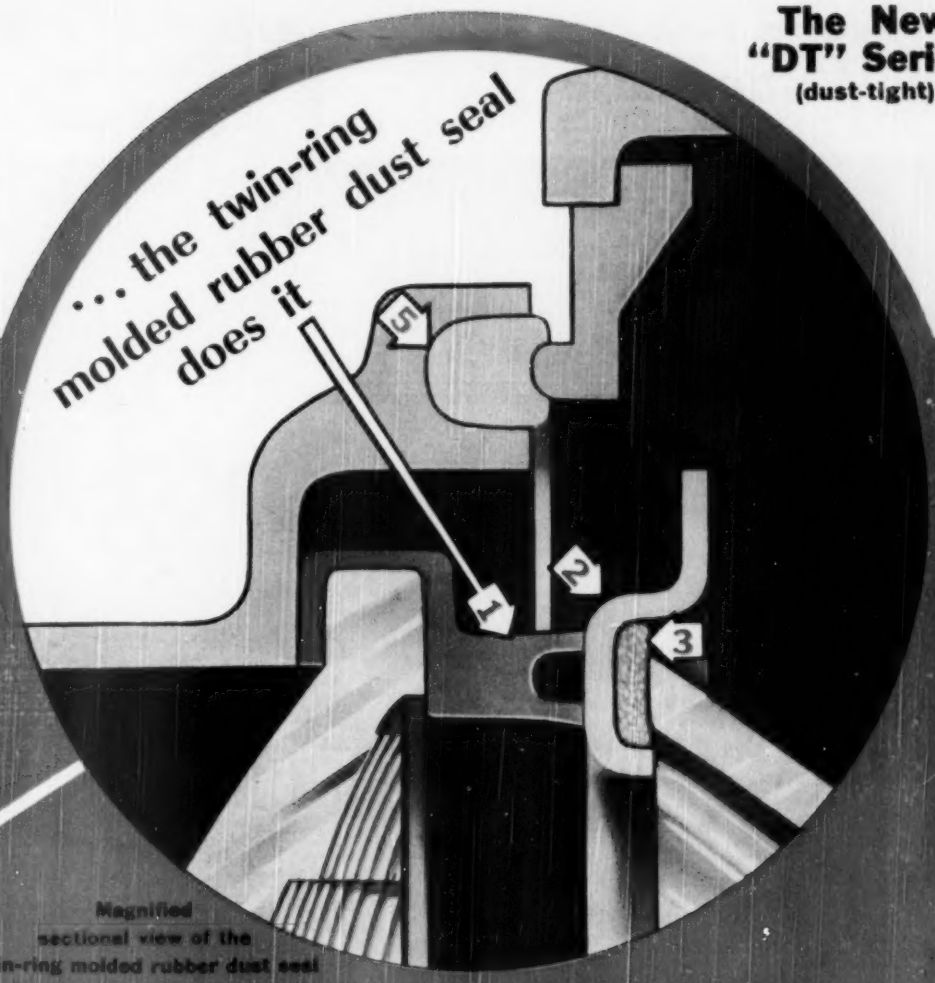


Dust-tight Optical System — Sectional View

# The New "DT" Series
(dust-tight)

. . . .

. . . the twin-ring molded rubber dust seal does it




Magnified sectional view of the twin-ring molded rubber dust seal

## Built-in Barriers Through Which Dust CANNOT PASS

1. **TWIN-RING DUST SEAL** . . . . makes double contact with the reflector ring . . . . gives double protection . . . . also serves as lens gasket.
2. **ALUMINUM REFLECTOR RING** . . . . rigid, flat surface insures postive contact with the rubber twin-ring . . . . makes a dust-tight seal.
3. **CORK REFLECTOR GASKET** . . . . gives a dust-tight joint at the reflector edge.
4. **CORK RECEPTACLE GASKET** . . . . completely seals the receptacle opening.
5. **RESILIENT DOOR GASKET** . . . . makes the housing weather-proof.
6. **DOOR CATCHES** . . . . two on every door insure uniform pressure against the door gasket and the twin-ring seal.

TRAFFIC SIGNALS
AIRPORT LIGHTING
FLOODLIGHTS
CONDULETS

**CROUSE-HINDS COMPANY**
Syracuse 1, N. Y.

Offices: Birmingham — Boston — Buffalo — Chicago — Cincinnati — Cleveland — Dallas — Denver — Detroit — Houston — Kansas City, Mo. — Los Angeles — Minneapolis — New York — Philadelphia — Pittsburgh — Portland, Ore. — Salt Lake City — San Francisco — Seattle — St. Louis — Washington, D. C. — Export Representative: Albany

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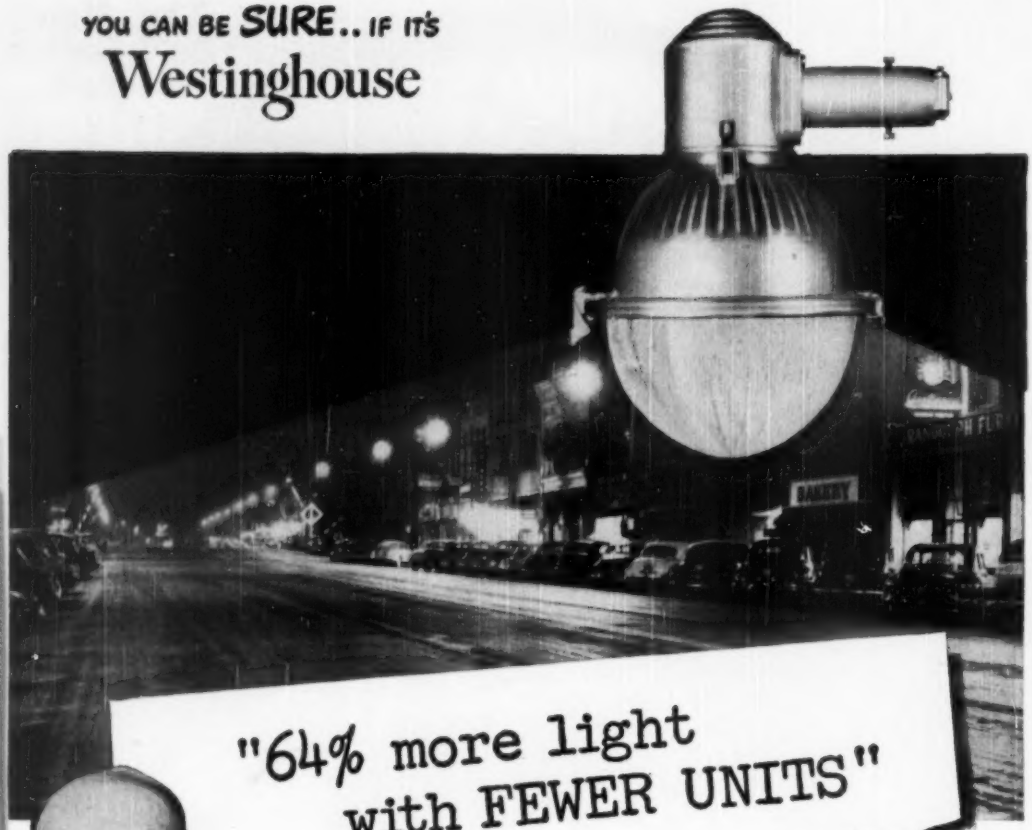
A Nationwide Distribution Through Electrical Wholesalers

YOU CAN BE **SURE**.. IF IT'S

# Westinghouse




## "64% more light with FEWER UNITS"

**Mayor Davis B. Johnson reports**

*"The new Westinghouse AK-10's are almost 100% more efficient than the old lights. Now, any person can drive our streets at night—and see everything on the street, including highway markers and signs—which I can assure you means safety.*

*"Intersections can be seen plainly at least two blocks away. This is almost daytime visibility!"*

What's more, Wauseon, Ohio, made an economical investment. This new, modern installation is easy to maintain . . . was easy to install.

Want proof? Don't take our word for it. Write the mayor of Wauseon.

Better yet, go see him. Seeing for yourself is real proof. J-04275-A

**"There's danger in darkness . . . but safety in light."**

**Westinghouse**

**PLANNED LIGHTING SYSTEMS**

engineers, Ellerbe and Co. Their report states, in part:

Conclusions: The new refracting-lens street lights provide an illumination that is remarkably uniform both on the sidewalks and on the street with the greater illumination on the street where it should be. It is a very efficient unit with a high utilization factor, which means that a greater percentage of the illumination output of the lamp is useful illumination as compared with the more conventional street-lighting fixtures. The new street lights, in addition to providing approximately ten times more illumination on the street, are far superior to the old lights from the standpoint of glare. The new lights, due to their mounting height, are farther above the normal line of vision and therefore permit much better visibility. This feature of the new lights is particularly valuable on dark rainy nights when reflected glare from street lights constitutes a real hazard to the automobile driver. We believe that with the new lights this hazard is materially reduced.

In view of the above-mentioned points of superiority of the new lights over the old, we feel that any extension of this new lighting system to other streets in downtown St. Paul would be entirely justified.

Besides the increased lighting intensity and resultant pedestrian and motorist safety factor, the new luminaires have reduced maintenance cost considerably, according to Mr. Streich. He bases this cost reduction on the elimination of post-painting and the replacement of damaged posts and light globes. "Due to the location of the new units," he explained, "we're no longer faced with breakage losses due to juvenile vandalism."

To the civic organizations striving for the betterment of the city, the new shopping-district lights are a definite forward step in the modernization plans of the Greater St. Paul area, and could be successfully introduced in other cities.

# Big Mercurys Light Two U. S. "Main Streets" In Sweetwater, Texas

By H. S. THORGRIMSEN
*City Manager*
*Sweetwater, Texas*

SWEETWATER, Texas (estimated 1950 population, 17,000) is on U. S. Highway 80, one of the several "Main Streets of America." Traffic on this highway from the East and Midwest to southern California, Arizona and New Mexico is tremendous. The entire length of this highway, as it passes through the city, has been newly lighted with mercury-vapor fixtures with an output of 17,000 lumens. From north to south the city is crossed by Texas Highway No. 70, which originates on the Mexican border at Del Rio and loses itself somewhere in the Panhandle. All of this highway from the south city limits to the business section of the city has been lighted with fixtures of the same type.

Three railroads serve Sweetwater, so that routes extend in six directions from and to the city. These are the Texas and Pacific Main line, the Gulf, Colorado, and Santa Fe Main Line, and the Panhandle and Santa Fe. On each street intersection with these lines, the city has installed 24,000-lumen sodium-vapor lights whose amber glow is a warning to pedestrian and to vehicular traffic.

There are 127 mercury-vapor lights in all, 57 of them on steel standards. The arms of these are 16 feet long, though at some points 7-foot brackets are used. General Electric luminaires and lamps are used throughout the installation.

Spacing of the standards was calculated in terms of density of structures and population. Immediately inside the city limits at the south on State Highway 70 the lights are spaced 300 feet apart but as they approach the business section the space is shortened to 150 feet and then to 100 feet. On U. S. Highway 80 those portions nearest the city limits are lighted by fixtures spaced at 300 feet, with the intermediate belts using a spacing of 150 feet, but on nine blocks through the business sections 100-feet spacings are employed.

The steel standards were manufactured by the Southern Ornamental Iron Works of Arlington, Texas. The poles taper toward the top. These steel poles are used throughout the business sections, but wooden poles are used elsewhere. The perimeter of the Court House Square is completely lighted by the new fixtures.

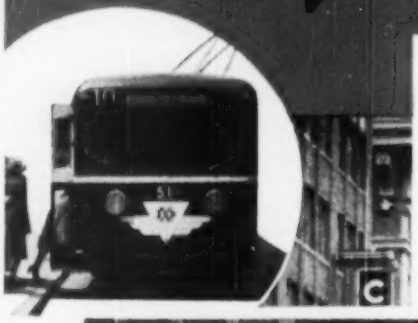
The luminaires are mounted at an elevation of 27 feet above the street. A significant detail connected with the installation, as revealed by the photographs, is that whereas the old lights blurred and glared at the motorist to such an extent that automobiles a hundred yards away could not be seen, with the new installation all vehicles within the range of vision are seen in silhouette.

The installation was made at no cost to the city by the Texas Electric Service Company. The city pays only for the increased consumption of current plus 35 cents per standard per month for the 57 steel poles.

**This is U. S. Highway 80 before new lights were turned on. It was lighted by 175-watt lamps of 2,500 lumens.**

**Same highway with new lighting. It is "whited" by 17,000-lumen mercury-vapor lamps 27 feet above the pavement.**

# Trolley Coach helps Dayton



## Win Battle Against Traffic Congestion

To many harassed city planning engineers, downtown Dayton would look very much like paradise. Stand at the corner of Main and Third Streets during the rush hour and it's hard to believe you're in the center of a metropolitan area of almost 400,000 population . . . traffic is so quiet and orderly.

As you look down either street, in either direction, you see trolley coaches move into the curb, load and then quickly pull back into traffic which flows by in a steady stream . . . moving at an average rate up to 16.5 miles per hour, even during peak periods.

Dayton's early choice of the trolley coach as its basic transportation vehicle stands out as an important reason for the city's near-freedom from traffic congestion. Trolley coaches first came to this Ohio city in 1933. Now almost 200 of these quiet, electric vehicles travel the city streets.

Three transit companies serve Dayton—The City Railway Company, The Oakwood Street Railway Company, and The Dayton-Xenia Railway Company. All chose the trolley coach, a happy choice both for them and for the riding public . . . because THEY ALL LIKE TROLLEY COACHES IN DAYTON.

4006-T

TROLLEY COACH AND STREETCAR LINE MATERIAL AND CAR EQUIPMENT

Ohio Brass

MANSFIELD, OHIO

# Conventions — When and Where

Conventions listed this month for the first time are indicated by an asterisk (*).

**Aug. 13-16—Los Angeles, Calif.**
AMERICAN SOCIETY OF PLANNING OFFICIALS. National Planning Conference (Hotel Biltmore). Exec. Dir., Walter Blucher, 1313 E. 60th St., Chicago 37, Ill.

**Aug. 21-23—State College, Pa.**
PENNSYLVANIA WATER WORKS OPERATORS' ASSOCIATION. Annual Conference. Sec.-Treas., R. E. Stiemke, Dept. of Civil Engineering, The Pennsylvania State College, State College, Pa.

**Aug. 21-24—Pasadena, Calif.**
ILLUMINATING ENGINEERING SOCIETY. Annual Convention (Hotel Huntington). Exec. Sec., A. D. Hinckley, 51 Madison Ave., New York 10, N. Y.

**Aug. 21-25—Syracuse, N. Y**
NATIONAL SHADE TREE CONFERENCE. Annual Meeting (Hotel Syracuse). Sec.-Treas., L. C. Chadwick, Ohio State University, Columbus, Ohio.

**Aug. 27-Sept. 2—Amsterdam, Holland**
INTERNATIONAL FEDERATION FOR HOUSING AND TOWN PLANNING. Annual Congress (City University). Sec.-Gen., H. van der Weijde, Singel 453, Amsterdam C., Holland.

**Aug. 28-30—Pittsburgh, Pa.**
PENNSYLVANIA STATE ASSOCIATION OF COUNTY COMMISSIONERS. Annual Convention (Hotel William Penn). Sec.-Treas., Herbert S. Bolger, Commissioners' Office, Court House, Hollidaysburg, Pa.

**Sept. 3-7—Atlantic City, N. J.**
NATIONAL ASSOCIATION OF COUNTY OFFICIALS. Annual Convention (Hotel Ambassador). Sec., Keith L. Seegmiller, 1616 I St., NW., Washington 6, D. C.

**Sept 6-8—St. Paul, Minn.**
AMERICAN WATER WORKS ASSOCIATION—Minnesota Section. Annual Conference (Hotel St. Paul). Sec.-Treas., R. M. Finch, 518 Metropolitan Life Bldg., Minneapolis 1, Minn.

**Sept. 6-8—Asbury Park, N. J.**
GOVERNMENTAL RESEARCH ASSOCIATION. Annual Conference. Sec., Louis D. Brown, 30 Rockefeller Plaza, New York 20, N. Y.

**Sept. 7-8—Upper Saranac Lake, N. Y.**
AMERICAN WATER WORKS ASSOCIATION—New York Section. Fall Meeting (Saranac Inn). Sec.-Treas., R. K. Blanchard, 50 W. 50th St., New York, N. Y.

**Sept. 10-12—Valley City, N. D**
LEAGUE OF NORTH DAKOTA MUNICIPALITIES. Annual Convention (Hotel Rudolph). Exec. Sec., Myron H. Atkinson, City Auditor, Bismarck, N. D.

**Sept. 10-12—Virginia Beach, Va.**
LEAGUE OF VIRGINIA MUNICIPALITIES. Annual Meeting (Hotel Cavalier). Exec. Sec., Harold I. Baumes, 905 Travelers Bldg., Richmond, Va.

***Sept. 11-13—Lake of Bays, Ontario**
CANADIAN INSTITUTE ON SEWAGE AND SANITATION. Annual Meeting (Bigwin Inn). Sec., Dr. A. E. Berry, Parliament Bldgs., Toronto, Ont., Canada.

**Sept 11-14—Pittsburgh, Pa.**
NATIONAL TAX ASSOCIATION. Annual Conference (Hotel William Penn). Sec., Ronald B Welch, P. O. Box 1799, Sacramento 8, Calif.

**Sept. 12-15—San Francisco, Calif.**
INTERNATIONAL ASSOCIATION OF FIRE CHIEFS. Annual Conference (Civic Auditorium). James E. Jagger, Gen. Mgr., 22 E. 38th St., New York 16, N. Y.

**Sept. 13-14—Huntington, W. Va.**
AMERICAN WATER WORKS ASSOCIATION—West Virginia Section. Annual Convention (Hotel Prichard). Exec. Sec., J. B. Harrington, care of State Health Department, Charleston, W. Va.

**Sept. 13-15—Portland, Ore.**
NORTHWEST PUBLIC POWER ASSOCIATION. Annual Meeting (Hotel Portland). Sec., Gus Norwood, Andresen and MacArthur Blvd., McLoughlin Heights, Vancouver, Wash.

**Sept. 13-15—Mitchell, S. D.**
SOUTH DAKOTA MUNICIPAL LEAGUE. Annual Meeting (Hotel Lawlor). Sec., R. D. Falk, Law Bldg., Vermillion, S. D.

**Sept. 13-16—Salt Lake City, Utah**
UTAH MUNICIPAL LEAGUE. Annual Meeting (Hotel Newhouse). Exec. Dir., Tom McCoy, Newhouse Hotel, Salt Lake City, Utah.

**Sept. 17-20—Poland Springs, Maine**
NEW ENGLAND WATER WORKS ASSOCIATION. Annual Convention. Sec., Joseph C. Knox, 609 Statler Bldg., Boston 16, Mass.

**Sept. 18-20—Wichita, Kans.**
THE LEAGUE OF KANSAS MUNICIPALITIES. Annual Meeting (Hotel Broadview). Exec. Dir., John G. Stutz, 512 Capitol Federal Bldg., Topeka, Kans.

**Sept. 18-21—New York, N. Y.**
INTERNATIONAL MUNICIPAL SIGNAL ASSOCIATION. Annual Convention (Hotel Commodore). Sec., Irvin Shulsinger, 11 West 42nd St., New York 18, N. Y.

**Sept. 19-21—Davenport, Iowa**
IOWA SEWAGE WORKS ASSOCIATION. Annual Meeting (Hotel Blackhawk). Sec.-Treas., Leo Holtkamp, Box 310, Webster City, Iowa.

**Sept. 19-21—Oshkosh, Wis.**
AMERICAN WATER WORKS ASSOCIATION—Wisconsin Section. Annual Meeting (Hotel Raulf). Sec., Leon A. Smith, City Hall, Madison 3, Wis.

***Sept. 19-21—North Platte, Nebr.**
LEAGUE OF NEBRASKA MUNICIPALITIES. Annual Convention (Hotel Pawnee). Exec. Sec.-Treas., C. E. Beals, 807 Continental Bldg., Lincoln, Nebr.

***Sept. 20-24—Madrid, Spain**
INTERNATIONAL FEDERATION OF LANDSCAPE ARCHITECTS. Annual Conference. Sec., C. de Cossio de las Barcenas, Museo Romantico, Calle San Mateo, No. 13, Madrid, Spain.

**Sept. 20-22—Glens Falls, N. Y.**
MUNICIPAL ELECTRIC UTILITIES ASSOCIATION OF NEW YORK STATE. Annual Conference (Hotel Queensbury). Exec. Sec., B. N. Sparks, 93 Park St., Tupper Lake, N. Y.

**Sept. 24-27——New York, N. Y.**
INSTITUTE OF TRAFFIC ENGINEERS. Annual Meeting (Hotel Commodore). Chairman, E. G. Wetzel, Port of New York Authority, 111 Eighth Ave., New York 11.

**Sept. 24-27—Omaha, Nebr.**
AMERICAN CHAMBER OF COMMERCE EXECUTIVES. Annual Meeting (Hotel Fontanelle). Exec. Sec., Elizabeth Glenn, 1615 H St. N.W., Washington, D. C.

***Sept. 25-26—Bolton Landing, Lake George, N. Y.**
COUNTY OFFICERS ASSOCIATION OF THE STATE OF NEW YORK. Annual Summer Convention (Lake George Sagamore). Exec. Sec., Donald C. Scribner, County Bldg., Johnstown, N. Y.

***Sept. 25-26—Oshkosh, Wis.**
WISCONSIN CHIEFS OF POLICE ASSOCIATION. Annual Conference (Hotel Athearn). Exec. Sec., Walter H. Wagner, Chief of Police, Sheboygan, Wis.

**Sept. 25-27—Los Angeles, Calif.**
AMERICAN TRANSIT ASSOCIATION. Annual Convention (Hotel Biltmore). Gen. Sec., A. W. Baker, 292 Madison Ave., New York 17, N. Y.

**Sept 25-28—Dallas, Texas**
AMERICAN INSTITUTE OF PARK EXECUTIVES. Annual Convention (Hotel Baker). Exec. Sec., Frank L. Brunckhorst, 30 North LaSalle St., Chicago, Ill.

**Sept. 25-28—Chicago, Ill.**
THE ASSOCIATION OF SCHOOL BUSINESS OFFICIALS. Annual Convention (Hotel Sherman). Sec.-Treas., H. W. Anderson, 310 E. Lovell St., Kalamazoo, Mich.

***Sept. 26-29—Atlantic City, N. J.**
PENNSYLVANIA WATER WORKS ASSOCIATION. Annual Convention (Hotel Claridge). Sec.-Treas., W. A. Kufs, 920 N. Third St., Harrisburg, Pa.

***Sept. 27-28—Mammoth Cave, Ky.**
KENTUCKY MUNICIPAL LEAGUE. Annual Convention (Hotel Mammoth Cave). Exec. Sec., Carl B. Wachs, Kastle Hall, University of Kentucky, Lexington 29, Ky.

***Sept. 28-29—San Francisco, Calif.**
WESTERN GOVERNMENTAL RESEARCH ASSOCIATIONS. Annual Conference (Hotel Bellevue). Exec. Sec., John C. Bollens, 346 Library Annex, University of California, Berkeley 4, Calif.

**Sept. 28-29—Santa Fe, N. M.**
AMERICAN WATER WORKS ASSOCIATION—Rocky Mountain Section. Annual Meeting (Hotel La Fonda). Exec. Sec., George Tuttle, Sanitary Engineer, Denver Water Dept., City and County Bldg., Denver, Colo.

**Sept. 28-30—York, Pa.**
PENNSYLVANIA LEAGUE OF THIRD-CLASS CITIES. Annual Convention (Hotel Yorktowne). Pres., W. E. Greenwood, City Hall, Harrisburg, Pa.

**Sept. 28-29—Aberdeen, S. D.**
SOUTH DAKOTA WATER AND SEWAGE WORKS CONFERENCE. Annual Meeting (Hotel Alonzo Ward). Exec. Sec., Charles E. Carl, Division of Sanitary Engineering, Pierre, S. D.

**Oct 1-3—St. Louis, Mo.**
AMERICAN WATER WORKS ASSOCIATION—Missouri Section, and Missouri Water and Sewage Conference. Annual Convention (Hotel Sheraton). Sec.-Treas., Warren A. Kramer, State Office Bldg., Jefferson City, Mo.

**Oct. 2-6—Cleveland, Ohio**
NATIONAL RECREATION ASSOCIATION CONGRESS. Annual Meeting (Hotel Statler). Exec. Dir., Joseph Prendergast, 315 Fourth Ave., New York 10, N. Y.

***Oct. 4-6—Detroit, Mich.**
MICHIGAN MUNICIPAL LEAGUE. Annual Convention (Hotel Statler). Exec. Dir., John Huss, 205 S. State St., Ann Arbor, Mich.

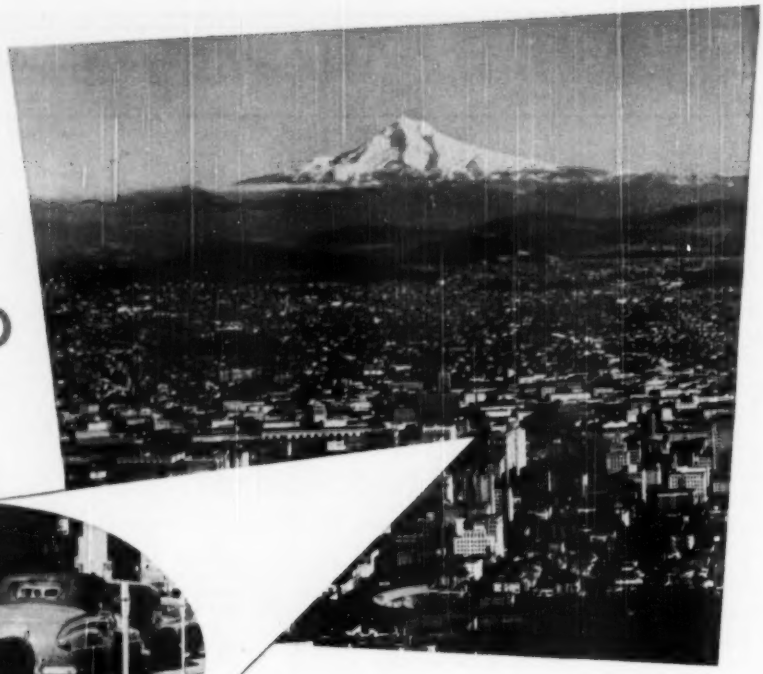
**Oct. 4-6—Bismarck, N. D.**
NORTH DAKOTA WATER AND SEWAGE WORKS CONFERENCE. Annual Convention (Hotel Patterson). Sec.-Treas., Jerome H. Seore, State Health Dept., Bismarck, N. D.

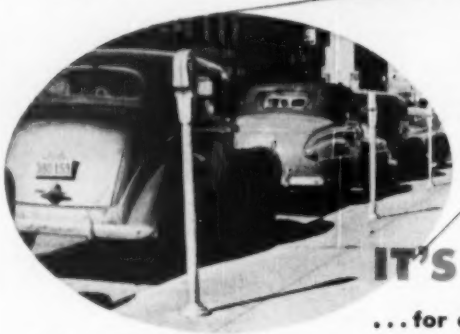
**Oct. 7-12—Colorado Springs, Colo.**
INTERNATIONAL ASSOCIATION OF CHIEFS OF POLICE. Annual Conference (Hotel Antlers). Exec. Sec., E. J. Kelly, 1424 K St., NW., Washington 5, D. C.

**Oct. 8-11—Milwaukee, Wis.**
NATIONAL INSTITUTE OF GOVERNMENTAL PURCHASING. Annual Conference (Hotel Schroeder). Exec. Dir., Albert H. Hall, 730 Jackson Place, NW., Washington 6, D. C.

**Oct. 9-12—Washington, D. C.**
FEDERATION OF SEWAGE WORKS ASSOCIATION. Annual Meeting (Hotel Statler). Sec. W. H. Wisely, 325-26 Illinois Bldg., Champaign, Ill.

# IN PORTLAND THEY SAY—





*Well over 3000 Dual Parking Meters, like these, serve in beautiful Portland, Oregon, shown above with majestic Mt. Hood in background.*

## IT'S DUAL ALL THE WAY!

**. . . for dependable operation and low maintenance**

HERE'S a typical Dual case history that should start any parking meter-minded city thinking. Back in 1938, Portland, Oregon, installed 721 Dual Automatic Parking Meters. In 1941, 350 more were installed. After the war, Dual installations were resumed. As of June, 1950, 3,868 were on the job!

It's easy to see why Portland city officials like Duals. Their records show remarkably low maintenance cost—less than fifteen cents per meter per year over a 10-year period! Portland Traffic Engineer F. T. Fowler says: "We have now had 12 years' experience with Dual Parking Meters. A large number of the original mechanisms purchased in 1938 are still in service. Because of the excellent service, we have concentrated on a plan under which nothing but Dual Parking Meters would be used."

And the new Dual Automatic Gearshift Meters help make parking control more flexible than ever. A mere shift of a gear lever instantly changes 1-hour to 2-hour timing, or vice versa. Other conversions in timing or coin combinations can be made easily, as required.

If you plan to install or modernize metered parking, get all the facts about rugged, weather-proof, tamper-proof Duals. See how they can give your community dependable, economical service for years to come. Write for details.

**THE DUAL PARKING METER COMPANY**

A subsidiary of The Union Metal Manufacturing Company

Canton 2, Ohio

. . . YOUR BEST ANSWER TO EVERY PARKING PROBLEM

**Oct. 9-12—Atlantic City, N. J.**
NATIONAL ASSOCIATION OF ASSESSING OFFICERS. Annual Conference (Hotel Ambassador). Exec. Dir., Albert W. Noonan, 1313 E. 60th St., Chicago 37, Ill.

***Oct. 10—New York, N. Y.**
REGIONAL PLAN ASSOCIATION OF NEW YORK. Annual Conference (Hotel Roosevelt). Exec. Vice-Pres., C. McKim Norton, 205 E. 42nd St., New York 17, N. Y.

**Oct. 15-18—New Orleans, La.**
AMERICAN WATER WORKS ASSOCIATION—Southwest Section. Annual Meeting (Hotel Roosevelt). Sec.-Treas., L. A. Jackson, Robinson Memorial Auditorium, Little Rock, Ark.

**Oct. 15-18—New York, N. Y.**
AMERICAN PUBLIC WORKS ASSOCIATION. Annual Conference (Hotel New Yorker, Ninth Regiment Armory). Exec. Dir., D. F. Herrick, 1313 E. 60th St., Chicago 37, Ill.

***Oct 16-18—Pittsburgh, Pa.**
ENGINEERS' SOCIETY OF WESTERN PENNSYLVANIA. Annual Conference (Hotel William Penn). Exec. Sec., W. M. Porter, Hotel William Penn, Pittsburgh, Pa.

**Oct. 16-19—Detroit, Mich.**
NATIONAL ASSOCIATION OF HOUSING OFFICIALS. Annual Meeting (Hotel Statler). Exec. Dir., J. M. Ducey, 1313 E. 60th St., Chicago 37, Ill.

***Oct. 16-20—Chicago, Ill.**
NATIONAL SAFETY COUNCIL. 38th National Safety Congress and Exposition (Hotels Stevens, Congress, Morrison, LaSalle). Gen. Sec., R. L. Forury, 425 North Michigan Ave., Chicago 11, Ill.

***Oct. 19-20—Fond du Lac, Wis.**
LEAGUE OF WISCONSIN MUNICIPALITIES. Annual Convention (Hotel Retlaw). Exec. Sec., Frederick N. MacMillin, 30 East Johnson St., Madison 3, Wis.

***Oct. 19-21—Springfield, Ill.**
ILLINOIS ASSOCIATION OF PARK DISTRICTS. Annual Convention (Hotel Leland). Exec. Sec., Miss Marjorie Dickinson, 401½ East Capitol, Springfield, Ill.

***Oct. 22-25—San Antonio, Texas**
LEAGUE OF TEXAS MUNICIPALITIES. Annual Convention (Hotel Gunter). Exec. Dir., E. E. McAdams, 2220 Guadalupe St., Austin 21, Tex.

**Oct. 22-24—Asheville, N. C.**
NORTH CAROLINA LEAGUE OF MUNICIPALITIES. Annual Convention (Grove Park Inn). Exec. Sec., Mrs. Davetta L. Steed, 1009 Raleigh Bldg., Raleigh, N. C.

**Oct. 23-25—Los Angeles, Calif.**
LEAGUE OF CALIFORNIA CITIES. Annual Meeting (Hotel Biltmore). Exec. Dir., Richard Graves, Hotel Claremont, Berkeley 5, Calif.

**Oct. 23-25—Memphis, Tenn.**
AMERICAN WATER WORKS ASSOCIATION—Kentucky-Tennessee Section. Annual Meeting (Hotel Peabody). Sec.-Treas., R. P. Farrell, 420 Sixth Ave. N., Nashville, Tenn.

**Oct. 23-25—Charleston, S. C.**
AMERICAN WATER WORKS ASSOCIATION—Southeastern Section. Annual Meeting (Hotel Fort Sumter). Sec.-Treas., T. A. Kolb, 433 Wade Hampton Bldg., Columbia, S. C.

**Oct. 25-27—Detroit, Mich.**
AMERICAN WATER WORKS ASSOCIATION—Michigan Section. Annual Meeting (Hotel Detroit-Leland). Sec.-Treas., T. L. VanderVelde, Michigan Dept. of Health, Lansing 4, Mich.

**Oct. 25-28—San Diego, Calif.**
AMERICAN WATER WORKS ASSOCIATION—California Section. Annual Conference. Sec., H. C. Medbury, Engineer of Water Purification, San Francisco Water Dept., Millbrae, Calif.

**Oct 26-27—Des Moines, Iowa**
AMERICAN WATER WORKS ASSOCIATION—Iowa Section. Annual Meeting (Hotel Fort Des Moines). Gen. Mgr., H. V. Pedersen, Marshalltown Water Works, Marshalltown, Iowa.

**Oct. 26-28—Atlantic City, N. J.**
AMERICAN WATER WORKS ASSOCIATION—New Jersey Section. Fall Meeting (Hotel Madison). Sec.-Treas., C. B. Tygert, Box 178, Newark.

**Oct. 30-Nov. 3—St. Louis, Mo.**
AMERICAN PUBLIC HEALTH ASSOCIATION. Annual Meeting (Kiel Auditorium). Exec. Sec., Reginald M. Atwater, M.D., 1790 Broadway, New York 19, N. Y.

**Nov. 1-3—Wilmington, Del.**
AMERICAN WATER WORKS ASSOCIATION—Chesapeake Section. Annual Conference (Hotel Du Pont). Sec.-Treas., C. J. Lauter, 5902 Delacarlia Place, Washington 16, D. C.

**Nov. 12-15—Fort Lauderdale, Fla.**
AMERICAN WATER WORKS ASSOCIATION—Cuba and Florida Sections, and FLORIDA SEWAGE WORKS ASSOCIATION. Joint Cuban-Florida Water and Sewage Conference. Chairman, S. K. Keller, A.W.W.A., Florida Section, 504 Pennsylvania Ave., Clearwater, Fla.

***Nov. 13-15—Portland, Ore.**
LEAGUE OF OREGON CITIES. Annual Convention (Hotel Multnomah). Exec. Sec., Herman Kehrli, Johnson Hall, University of Oregon, Eugene, Ore.

***Nov. 20-21—Washington, D. C.**
CHAMBER OF COMMERCE OF THE UNITED STATES. Businessmen's Conference on Urban Problems. Sec., Ralph Bradford, 1615 H St., N.W., Washington, D. C.

***Nov. 26-Dec. 1—New York, N. Y.**
AMERICAN SOCIETY OF MECHANICAL ENGINEERS. Annual Meeting (Hotel Statler). Assistant Exec. Sec., Ernest Hartford, 29 W. 39th St., New York, N. Y.

**Nov. 26-30—Houston, Texas**
INTERNATIONAL CITY MANAGERS' ASSOCIATION. Annual Conference (Hotel Shamrock). Exec. Dir., Clarence E. Ridley, 1313 E. 60th St., Chicago 37, Ill.

***Nov. 27-29—New Orleans, La.**
NATIONAL INSTITUTE OF MUNICIPAL LAW OFFICERS. Annual Conference (Hotel Roosevelt). Exec. Dir., Charles S. Rhyne, 730 Jackson Pl., N.W., Washington, D. C.

**Nov. 27-30—Atlanta, Ga.**
CIVIL SERVICE ASSEMBLY OF THE UNITED STATES AND CANADA. Annual Conference (Hotel Biltmore). Dir., Kenneth O. Warner, 1313 E. 60th St., Chicago 37, Ill.

**Nov. 30-Dec. 2—Tucson, Ariz.**
AMERICAN WATER WORKS ASSOCIATION—Arizona Section. Annual Convention (Hotel Pioneer). Sec., Mrs. Helen Rotthaus, State Dept. of Health, State Capitol, Phoenix, Ariz.

**Nov. 30-Dec. 2—Chicago, Ill.**
AMERICAN PUBLIC WELFARE ASSOCIATION. Annual Meeting (Hotel Edgewater Beach). Dir., Miss Louis Dunn, 1313 E. 60th St., Chicago 37.

**Dec. 3-6—Washington, D. C.**
AMERICAN MUNICIPAL ASSOCIATION. Annual Meeting (Hotel Statler). Exec. Dir., Carl H. Chatters, 1313 E. 60th St., Chicago 37, Ill.

***Dec. 4-7—Miami, Fla.**
AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS. Annual Meeting (Hotel McCallister-Columbus). Exec. Sec., Hal H. Hale, 917 National Press Bldg., Washington 4, D. C.

***Jan. 9-12—Washington, D. C.**
HIGHWAY RESEARCH BOARD. Annual Meeting (National Academy of Science). Dir., Roy W. Crum, 2101 Constitution Ave., Washington 25, D. C.

**Mar. 12-14—Milwaukee, Wis.**
AMERICAN ROAD BUILDERS' ASSOCIATION. Annual Meeting (Hotel Schroeder). Pres., E. R. Needles, International Bldg, Washington 4, D. C.

# How the Nation's Largest Cities and Metropolitan Areas Rank in Population

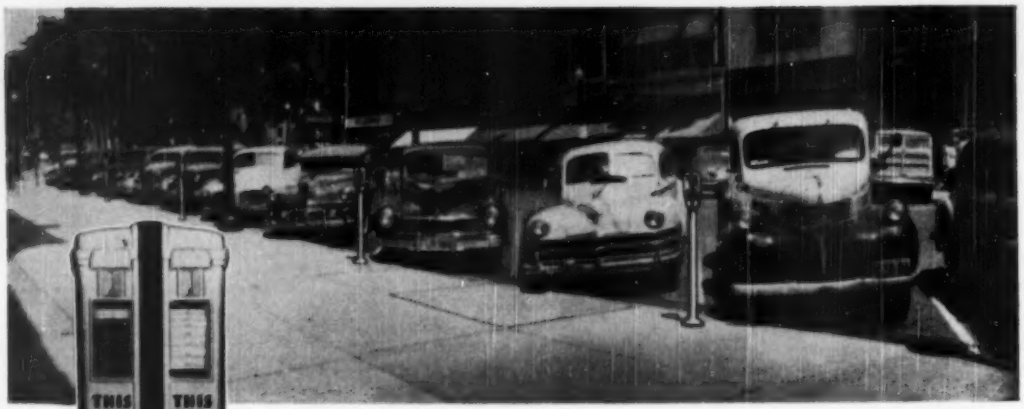
THAT the trend to the suburbs is accelerating in impetus is dramatically revealed by reports of the 1950 Census which have been released by the Census Bureau. The percentagewise gains in population of the large older cities during the last decade are tiny when compared with suburban population growth figures.†

The older, built-up cities face a tremendous challenge in remaking their cores so that they will be better places to live and work. Thus far the trend has been primarily residential in character, with people wanting to escape into the spaciousness and comparative freedom of suburban life. If the central cities do not plan and take advantage of every opportunity for community improvement now, it seems inevitable that increasingly business and industry will follow the movement of people, and also avoid the congestion, parking problems, and other intolerable conditions of many central city areas.

Preliminary figures for the twelve largest metropolitan areas, in the order of their total population, as released on July 29, 1950, are here reproduced. The figures in parentheses show the corresponding rank of the central cities.

The metropolitan areas consist of whole counties "substantially integrated" with the city's activities. The definition of such areas has been changed since 1940, when it cut across county lines. However, today's figures ignore the old lines and draw their comparisons between 1950 and 1940 in the whole counties which make up the present metroplitan areas.

| | 1950 | 1940 |
|---|---|---|
| 1. New York-northeast New Jersey area | 12,838,143 | 11,660,839 |
| New York City (1) | 7,841,610 | 7,454,995 |
| Suburbs (rest of area) | 4,996,533 | 4,205,844 |
| 2. Chicago area | 5,494,129 | 4,825,527 |
| Chicago (2) | 3,631,835 | 3,396,808 |
| Suburbs | 1,862,294 | 1,428,719 |
| 3. Los Angeles area | 4,330,962 | 2,916,403 |
| Los Angeles (4) | 1,954,056 | 1,504,277 |
| Suburbs | 2,376,926 | 1,412,126 |
| 4. Philadelphia area | 3,651,730 | 3,199,637 |
| Philadelphia (3) | 2,057,210 | 1,931,334 |
| Suburbs | 1,594,520 | 1,268,303 |
| 5. Detroit area | 2,997,417 | 2,377,329 |
| Detroit (5) | 1,837,617 | 1,623,452 |
| Suburbs | 1,159,800 | 753,877 |
| 6. Boston area | 2,353,368 | 2,177,621 |
| Boston (10) | 798,352 | 770,816 |
| Suburbs | 1,564,816 | 1,406,805 |
| 7. San Francisco area | 2,213,484 | 1,461,804 |
| San Francisco (11) | 760,381 | 634,536 |
| Suburbs | 1,453,103 | 827,268 |
| 8. Pittsburgh area | 2,193,870 | 2,082,556 |
| Pittsburgh (12) | 673,700 | 671,659 |
| Suburbs | 1,519,170 | 1,410,877 |
| 9. St. Louis area | 1,674,428 | 1,432,087 |
| St. Louis (8) | 852,523 | 816,048 |
| Suburbs | 821,905 | 616,039 |
| 10. Cleveland area | 1,457,559 | 1,267,270 |
| Cleveland (7) | 909,546 | 878,336 |
| Suburbs | 548,013 | 388,934 |
| 11. Washington, D. C. area | 1,452,349 | 967,985 |
| Washington (9) | 792,234 | 663,091 |
| Suburbs | 660,115 | 304,894 |
| 12. Baltimore area | 1,336,259 | 1,083,300 |
| Baltimore (6) | 941,809 | 859,100 |
| Suburbs | 394,450 | 224,200 |



*Alfco Twin Meter Angular Installation . . . Note the absence of multiple posts.*

# *The* ALFCO TWIN AUTOMATIC PARKING METER

## PARKS 2 CARS AT 1 METER

Yes indeed! you make a substantial savings with Alfco Twin Automatic Parking Meters whether parallel, angular, or off-street parking is employed. In fact, you can use all three ways if you like—and your advantage in substantial savings and more efficient parking continues to mount.

—because with Alfco Twin Meters you have about half as many meters to install—about half as many collections to make—about half the servicing and maintenance. Yet, the Alfco Twins do the full size job of providing a parking space for every car—at about half the cost of single meters.

Write us . . . we have models to suit your needs.

* This mark identifies products of American-LaFrance-Foamite Corporation

*Alfco Twin Meters provide more space for entry and exit.*

INTERNATIONAL METERS, INC.
EXECUTIVE OFFICES: 100 E. LaFRANCE ST., ELMIRA, N. Y.

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# Municipal and Civic Publications

## Community Programs For Military Personnel

COMMUNITY PLANNING FOR THE PEACETIME SERVICEMEN—*Prepared by The President's Committee on Religion and Welfare in the Armed Forces. April 1950. 26 pp. Committee Headquarters, Room 1046, Temporary R Bldg., Fourth and Jefferson Drive S.W., Washington 25, D. C. Publication for sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. 15 cents.*

A remarkably well-timed little booklet whose recommendations assume added importance now that military installations throughout the country are being reactivated and strengthened.

Local community responsibility for social welfare and religious activities for the benefit of the armed forces in their vicinity during off-duty hours is made clear, as an essential to the ultimate security of our society. To tie the nation's service personnel more closely to the civilian community, the report recommends the establishment of coordinating committees with broad representation. The booklet suggests how such committees can be established and recommends principles of operation.

Suggested lists of activities and responsibilities are included. The booklet mentions that in many places city officials have funds, facilities, and personnel available for a serviceman's program, and that recreation directors, housing officials, welfare workers, public health officials, school administrators, park superintendents, and librarians have much to contribute to the total program.

## Basic Statement on Urban Development Policy

STATEMENT OF POLICY ON URBAN DEVELOPMENT AND EXPANSION—*The American Institute of Planners, Room 5-406A, 77 Massachusetts Ave., Cambridge 39, Mass. March 1950. 6 pp. 10 cents per copy.*

This important statement, adopted by the American Institute of Planners at its annual meeting in Niagara Falls, Ontario, in March, is now available in printed form. The statement should aid in increasing public understanding and strengthening popular support for comprehensive urban planning. It should be in the hands of all municipal officials, as it will undoubtedly help to influence future federal and state policies with regard to urban development and expansion. It should also serve as an effective rallying point for municipal groups in their struggles to attract effective interest and action on their problems from other levels of government.

## Community Colleges

DEMOCRACY'S COLLEGE, HIGHER EDUCATION IN THE LOCAL COMMUNITY—*By John S. Diekhoff. Harper and Brothers, 49 East 33rd St., New York 16, N. Y. 1950. 208 pp. $2.50.*

Local colleges, established by and for the local community, now number over 250 in this country. The purpose of this book is to make clear the special function of these colleges—as distinguished from privately endowed and state institutions—in our total educational system.

As a background to the subject the book reviews, first, the historic purposes of education in our democracy. From this point of departure it explores the special problems of the local college today—of local control and financial support, of curriculum planning, staffing, administration—and its distinct contribution in expanding opportunities for higher education and service to the community as a cultural center.

The book should prove important as a foundation for policy planning by civic leaders and educators with regard to the establishment of community colleges.

## Motor Truck Regulation

HIGHWAY SAFETY-MOTOR TRUCK REGULATION—*Council of State Governments, 1313 East 60th St., Chicago 37, Ill. 1950. 198 pp. $3.*

Extensive factual data on motor truck regulation and motor vehicle taxation are presented in this volume. Dealt with specifically are driver licensing, traffic control regulations, law enforcement by police and the courts, highway engineering, regulation of motor truck sizes, and weights, and motor vehicle taxation.

Among many recommended measures are uniform state laws regulating motor traffic, to facilitate interstate travel and, more important, make it safer. The report defines various means by which state agencies administering motor vehicle regulation can be strengthened.

Recommendations for future highway engineering include the counsel that, wherever possible, patchwork programs be delayed pending completion of a comprehensive state program of highway improvements. In dealing with limitations on sizes and weights of trucks, the report states that very few roads now in use were built to carry loads exceeding an axle weight of 18,000 pounds, and that most states have statutes conforming to this limitation. Means of coping with violators are examined.

Tax and fiscal policy for maintenance and extension of the highway system are also analyzed, and suggested approaches to state solutions of this problem are given.

## Playground Administration and Operation

PLAYGROUNDS, THEIR ADMINISTRATION AND OPERATION—*By George D. Butler. Revised Edition, 1950. A. S. Barnes and Co., 101 Fifth Ave., New York 3, N. Y. 480 pp. $4.*

Since its original publication in 1936, this volume has become a basic textbook for students in colleges and universities and an outstanding reference book for playground administrators and leaders. The book was prepared for the National Recreation Association, a service organization supported by voluntary contributions, and many recreation workers throughout the country have helped in making the book possible by sharing their experiences.

Though this revised edition covers approximately the same subjects as the previous volume, it has been completely rewritten and much new material has been introduced. The book indicates the enlarged function of the neighborhood playground, describes up-to-date programs, and discusses current methods of dealing with a variety of playground problems. Procedures represent practices followed by playground authorities in cities with outstanding playground service.

Material is included on playground operation, layout, equipment, personnel organization, training and duties, activity programs, safety, public relations and finance. The book will prove particularly useful to the worker on the individual playground in planning his program and in meeting the problems that arise from day to day.

## Articles on Gambling

GAMBLING—*May 1950 issue of* The Annals *of the American Academy of Political and Social Science. Edited by Morris Plowcow and Edwin J. Lukas. $2 per copy to non-members of the Academy; $5 for a year's subscription. The American Academy of Political and Social Science, 3817 Spruce St., Philadelphia 4, Pa.*

With the current great national and local interest in prosecution of illegal gambling activity, this issue of *The Annals* proves both especially timely and useful for local officials who may want to "brush up" on their knowledge of the over-all gambling situation. A distinguished group of experts has contributed article to the issue, some of which are brilliant in their analyses and suggestions for improvement.

## Abridged Building Code

ABRIDGED BUILDING CODE, 1950 EDITION—*Building Officials Conference of America, Inc., 51 East 42nd St., New York 17, N. Y. 119 pp. Paper cover, $3; Cloth cover, $4.50. For 10 to 99 copies, deduct 25 cents per copy; for 100 or more, deduct 50 cents per copy.*

The Abridged Building Code is intended for communities which are primarily residential in character, and it is applicable in many political subdivisions with populations up to 25,000 or 30,000. It is supplementary to a more comprehensive Basic Building Code, whose first printed edition will be available in late summer.

Attractively and clearly printed, the Abridged Building Code should be of great value to the estimated 15,000 villages, towns, boroughs and townships throughout the country which either have no building code at all, or outmoded and ineffective regulations to control building construction and direct the growth of the community.

The Code is the product of careful and intensive research by building officials themselves, and has been prepared in sufficiently flexible form to adapt itself to all new developments in the building industry and to permit the use of all safe materials and approved methods of construction which are found adequate for the intended use. Where the necessary state-enabling acts have been provided, this code can be adopted by reference by municipalities.

## Human Factors in Housing

SOCIAL PRESSURES IN INFORMAL GROUPS, A STUDY OF HUMAN FACTORS IN HOUSING—*By Leon Festinger, Stanley Schacter, and Kurt Back. Harper and Brothers, 49 East 33rd St., New York 16, N. Y. July, 1950. 240 pp. $3.*

An ingeniously simple experiment in social relationships is recorded in this valuable publication of The Research Center for Group Dynamics, University of Michigan, which makes remarkably clear the vast responsibility of city planners, housers, architects, and urban redevelopers for family and community satisfactions or dissatisfactions as a result of physical structure design and orientation.

The investigations reported were undertaken at the suggestion and with the financial support of the Albert Farwell Bemis Foundation at M.I.T. Miss Catherine Bauer, well-known housing expert and author, and Robert W. Kennedy, architect, have each contributed chapters to the book which help to point up the significance of the studies to those interested in planning and housing, and which also raise additional points and questions still to be resolved in other future studies.

Briefly, the book is a report of tenant relationships and reactions to their physical surroundings in two adjoining housing projects with facilities for 270 families located in Cambridge, Mass. Tenant organization efforts are described, there are reports of personal interviews, and the patterns of individual relationships and group structure are identified and analyzed.

## City-Owned Utilities in Kansas

CITY-OWNED UTILITIES—*Local Government Research Publication No. 91-49. The League of Kansas Municipalities, Topeka, Kans. May 1950. 22 pp.*

A detailed research report on water, electric, telephone and gas properties of cities in Kansas—with financial, operating, and rate statistics for 1949. These systems had a total revenue of $23,764,000 in 1949 as compared to $15,726,000 in 1944, an increase of 51 per cent. In the same period, the valuation of the utility systems increased 40%, from $80,031,000 to $112,228,000. The survey includes 378 city-owned water-works systems, 20 gas systems, 65 city-owned electric distribution systems, and 72 electric generating plants.

# Cut Your City's Parking Meter Supervision Cost up to 90%

TWO HOUR PARKING
TIME REMAINING
1 CENT FOR EACH 12 MIN.
1 NICKEL FOR EACH 1 HOUR
METERED PARKING IN EFFECT AS SHOWN AT LEFT.
WARNING

MARTIN patents 2177278 2228396

Other Patents Pending

***One Traffic Officer Can Supervise Up to 10 Times As Many***

MARTIN RED BALL PARKING METERS

***as any other type of parking meter because . . .***

## The Martin RED BALL

**—most outstanding of all violation signals—**

## can be seen 300 feet away

With Traffic Supervisors' wages as high as $1.87 an hour, parking meter supervision costs become an important item of city expense. On this item, alone, the savings offered by Martin meters can range from a few thousands up to hundreds of thousands of dollars a year, depending upon the number of meters in use. Write for complete information about this wonderful new parking meter—that is years ahead of its time.

**MUNICIPAL SALESMEN:** Several choice territories are still open. Write us for details of our plan.

Your Present Meters Taken in Trade

**MARTIN RED BALL PARKING METERS** *"The Aristocrat of Parking Meters"*

**Benton, Ill., U. S. A.**

*Division of J. W. MenHall Drilling Company, Oil Producers*

## Analysis of Community Structure

HUMAN ECOLOGY — A THEORY OF COMMUNITY STRUCTURE—*By Amos H. Hawley. The Ronald Press Co., 15 E. 26th St., New York 10, N.Y. 1950. 456 pp. $5.*

A good deal of insight into the nature and development of community structure is displayed in this comprehensive work on human life patterns and their effect on community growth and decline.

The author discusses the reasons for population movement. He discusses family organization, settlement, and segregation. The last chapters are devoted to the possibilities and limits of expansion in interregional organization, the growth of the city, and the local community.

The book should be of special value to students of urban growth patterns, and planners and municipal officials interested in the further control and shaping of the urban environment through public agencies.

## London's Government

THE CORPORATION OF LONDON, ORIGIN, CONSTITUTION, POWERS AND DUTIES — *Oxford University Press, 114 Fifth Ave., New York 11, N.Y. 1950. 251 pp. $3.*

This volume traces the long growth of municipal organization in the City of London, and explains that during recent years the powers of all local authorities in Great Britain have suffered considerable revision at the hands of the legislature—those of the City of London being more extensive have probably suffered most. The book attempts to bring into focus the manifold changes in the powers and duties of the Corporation effected by modern statutes after so many centuries of development through a long testing period of trial and error. The book should be of considerable value to those interested in the history of local and comparative government.

## Urban Mortgage Lending Study

URBAN MORTGAGE LENDING BY LIFE INSURANCE COMPANIES—*By R. J. Saulnier. National Bureau of Economic Research, Inc., 1819 Broadway, New York 23, N. Y. July 1950. 180 pp. $2.50.*

Insurance companies are becoming increasingly important as investors in residential, commercial and industrial properties, and are 'a significant factor in the mortgage market as a whole, according to this study. Their urban and farm mortgage holdings rose from $7.6 billion, which was 16.2% of all mortgage debt outstanding, to $8.5 billion, or 16.9% of the amount outstanding, between 1929 and 1947, reports the author of this volume, a professor of Economics at Barnard College.

The subject matter covers the importance of life insurance companies' investment in urban mortgage loans and the importance of these loans among the life insurance companies' earning assets; the legal framework for this credit activity; organization for mortgage lending; the types of mortgage loans made since 1920; the level of operating costs; and measures of mortgage investment experience.

Civic leaders and municipal officials concerned with private investment in urban redevelopment and moderate-income housing will find the book furnishes a good background for increased understanding of insurance company attitudes and operations.

## Public Relations

PUBLIC RELATIONS FOR MUNICIPALITIES—*By Marvin M. Black, Municipal Study Series No. 11. Bureau of Public Administration, University of Mississippi, University, Miss. 1950. 24 pp.*

A pocket-sized guide book which discusses the importance of municipal public relations programs, and which makes recommendations for the use of various public relations media. The public relations of city government employees is especially emphasized, and it is pointed out that upon the delicate thread of any city employee's behavior hangs the reputation of the whole city government.

## Two New Books On Scientific Research

SCIENTIFIC RESEARCH: ITS ADMINISTRATION AND ORGANIZATION—*Edited by George P. Bush and Lowell H. Hattery. American University Press, 2153 Florida Ave., Washington 8, D. C. 1950. 190 pp. $3.25.*

This volume is adapted from the proceedings of the First Institute on Administration of Scientific Research and Development presented at Washington, D. C. by the American University with the cooperation of the National Research Council and the American Association for the Advancement of Science.

The contents of the book give an excellent insight into basic research administration problems. The communications or public relations problems in research efforts are given considerable emphasis. New municipal research bureaus or offices should find a good deal of practical value in the volume.

THE PRINCIPLES OF SCIENTIFIC RESEARCH—*By Paul Freedman. Public Affairs Press, 2153 Florida Ave., Washington, D. C. 1950. 222 pp. $3.25.*

This book discusses problems involved in the execution of scientific research and in achieving recognition for scientific discoveries. It realistically faces the human difficulties, and points out the responsibility of administrators in whose power, to a considerable extent, the successful conduct of scientific research lies.

## Livingston, N. J., Plan

A LONG RANGE PLAN FOR PUBLIC SCHOOL, PARK AND RECREATION SITES AND SHOPPING CENTER LOCATIONS—*Prepared for the Planning Board, Board of Education, and Recreation Commission of Livingston, N. J. By Scott Bagby and Weaver Pangburn, 14 Mountainside Park Terrace, Upper Montclair, N. J. 1950. Mimeo. Illus. 20 pp.*

An especially important and excellent report which was undertaken under the joint auspices of three local agencies and which required the reconciling of many interests and points of view. Proof that this was done successfully and that the plan will become effective is evident in the fact that even before the plan was completed two of the sites recommended for development were secured by negotiation just in time to save them from other development. Livingston is a small municipality within a rapidly growing portion of the New York metropolitan area. The community is determined to maintain its spaciousness, as reflected in the planning of school sites, parks, shopping centers, and civic center developments.

## Community Educational Planning

AN EDUCATIONAL PROGRAM FOR OUR SCHOOLS, A MANUAL FOR COMMUNITY PARTICIPATION IN EDUCATIONAL PLANNING—*The University of the State of New York, The State Education Department, Albany, N. Y. 1950. 30 pp.*

,This manual outlines procedures for use by local groups in studying the educational needs of their communities. It is based on actual experiences in many New York State schools in using the first edition of the manual, published in 1944, and it suggests procedures which have proved workable. The major objectives of the manual are to suggest and describe approaches that will increase community participation,—and, therefore, community interest and responsibility—in educational planning.

## Michigan Planning Annual

COMMUNITY PLANNING ANNUAL 1950—*Michigan Society of Municipal Planning Officials. Published by the Society, January 1950. R. C. Eastman, Editor, Ann Arbor, Mich. Mimeo. 54 pp.*

This annual contains information on the work of the Michigan Society of Municipal Planning Officials, rosters, and a report of the proceedings of the 1949 Michigan State-Wide Planning Conference.

## Municipal Law Yearbook

MUNICIPALITIES AND THE LAW IN ACTION, 1950—*National Institute of Municipal Law Officers, 730 Jackson Place, N.W., Washington 6, D. C. 461 pp. $10.*

Emphasis in the current edition of this unique volume, prepared by municipal attorneys from their actual experiences in the year 1949, has been placed upon the ever-present taxation and revenue problems of cities, the legal aspects of municipal bond issues, and the administration of local zoning ordinances. There are special articles on municipal amusement taxes, on what constitutes doing business for licensing and taxing purposes, on specific legal experiences with bond issues, on interim zoning ordinances, and on height, bulk, area and setback requirements of such ordinances. In addition to these specialized treatments, general consideration of the taxing, bond and zoning problems will be found in the committee reports and conference panel discussions of these topics.

Other papers which appear include legal problems created by municipal retirement systems, the effect of gas, electric and transit rate cases upon municipalities, one city's experience in ordinance codification, use of the initiative and referendum procedure against local sales tax ordinances, and the creation of insurance reserve funds for municipalities.

Included among the committee reports on other subjects are summaries of the important legal developments on Public Housing; City Officer and Employee Problems; Airports; Public Utilities; Ordinances and Ordinance Enforcement; Federal-City Relations; City-State Relations; Inter-Municipal Cooperation; Civil Liberties; Contracts; Tort Liability; Building Codes and Fire Prevention Ordinances.

The material in this 13th edition of the volume is certainly indispensable to municipal attorneys and also should be found particularly useful to other municipal officials who are constantly concerned with the improvement of their administrations both from a legal and a practical viewpoint.

## Planning Personnel Survey

FINDINGS OF THE 1949 NATIONAL SURVEY ON PLANNING PERSONNEL: PRELIMINARY RECOMMENDATIONS ON IMPROVED PERSONNEL PRACTICE—*Subcommittee on Personnel Classification and Standards. American Institute of Planners, 77 Massachusetts Ave., Cambridge 39, Mass. 32 pp.*

A comprehensive report that provides current and comparable information on salaries and staffs, which should be useful to planning directors and other officials in setting up or improving their planning staffs. An evaluation on current personnel practice is also included, as a basis for recommendations on improved standards.

## Texas Home Rule Study

MUNICIPAL HOME RULE CHARTER ELECTIONS IN TEXAS—*By W. Terrell Blodgett. Institute of Public Affairs, The University of Texas, Austin, Tex. 1950. 32 pp. 60 cents.*

This study presents pertinent facts concerning municipal charter elections which have been held in Texas since July 1, 1947. During that time 35 completely new or revised charters have been presented to municipal voters for action, with 22 adopted by the electorate and 13 defeated. The study analyzes some of the reasons why municipal home rule charters have been accepted or rejected at the polls.

## Police Systems in Maryland

MARYLAND MUNICIPAL POLICE SYSTEMS—*By Christian L. Larsen and Edmund C. Mester. Bureau of Public Administration, University of Maryland, College Park, Md. 1950. 22 pp.*

A useful first-hand report on municipal police administration in Maryland carried forward under the joint sponsorship of the Bureau of Public Administration and the Maryland League of Municipalities. Twelve recommendations are made for the improvement of police administration by municipalities within the state.

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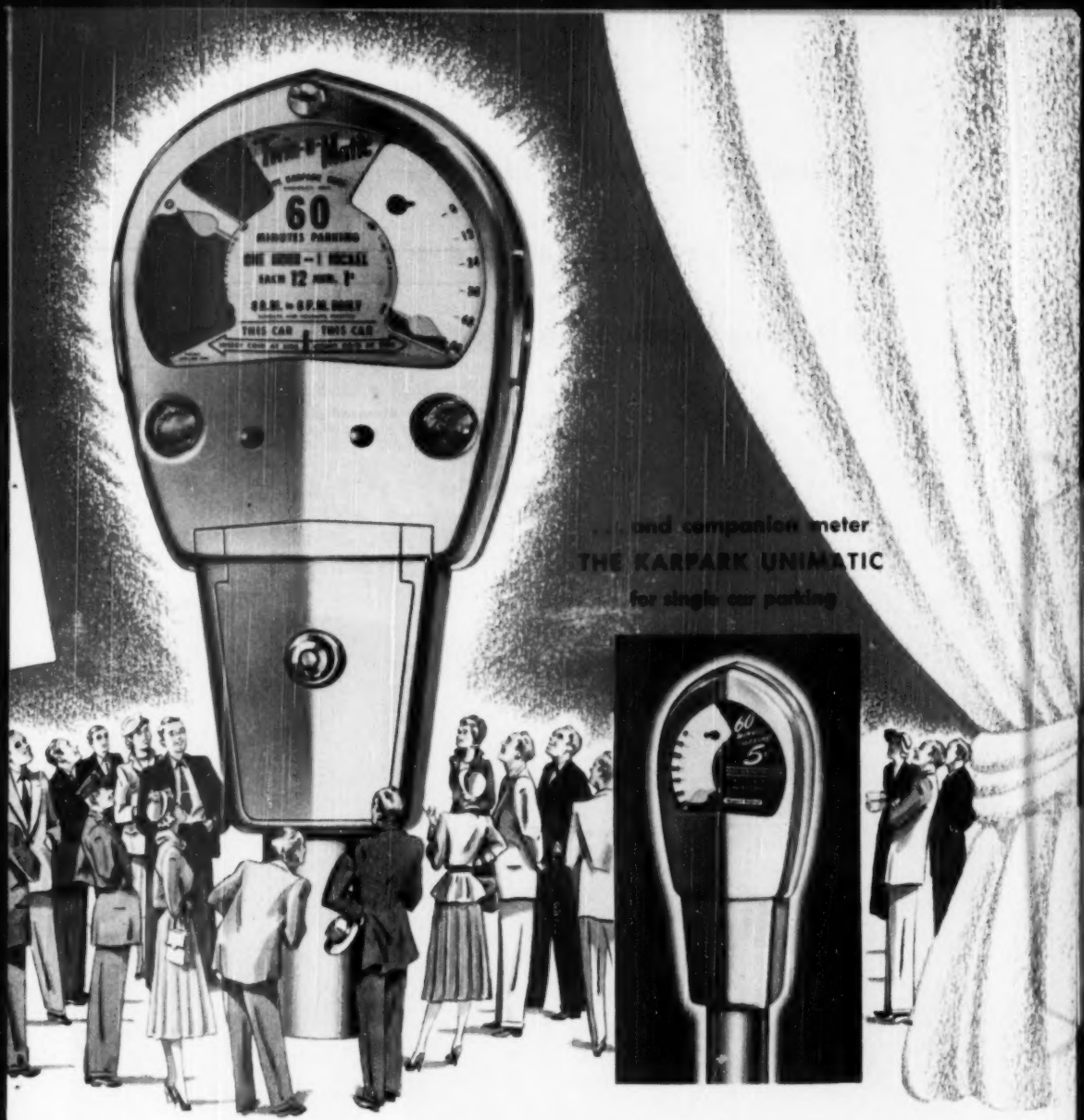


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## Architects and Public Housing

THE ARCHITECT AND PUBLIC HOUSING—*National Association of Housing Officials, 1313 E. 60th St., Chicago 37, Ill. April 1950. 8 pp. 50 cents.*

This is a message for local housing authorities based on the experience of the past. It is written by three executive directors of old and established housing authorities who are architects by profession. The report makes it clear how important it is to choose a competent architect for a local public housing development. Drab, unimaginative developments of institutional design that a community will have to live with for many years are one penalty if the choice is not carefully made, to say nothing of added maintenance costs, tenant dissatisfactions, etc., which can also result.

## How to Write Reports

PRACTICAL REPORT WRITING—*By Selby S. Santmyers. International Textbook Co., Scranton 9, Pa. 1950. 118 pp. $2.75.*

This book is intended for persons seriously intent upon learning how to write effective reports. The author is an industrial relations consultant and training specialist.

The emphasis of the book is on techniques, and the setting forth of methods which can be useful in the production of any sort of report. There is discussion of the preparing, thinking, planning, and designing that lead to making an outline and to laying out a path for the smooth running of ideas during the writing of the report.

Part One deals with the importance of reports to both readers and writers, with the background needed by the writers, with the gathering and organizing of material, and with the writing of the first rough draft. Part Two includes discussion of means and devices for making the whole report serve the purpose for which it was designed in the outline.

## Town Planning Review

TOWN PLANNING REVIEW, APRIL 1950—*Published by The University Press of Liverpool, England. Quarterly Journal. Vol. XXI, No. 1. Available from* THE AMERICAN CITY MAGAZINE, *470 Fourth Ave., New York 16, N. Y. 90 pp. $1.*

This quarterly journal is proving to be one of the most ably edited planning publications available. It has an international advisory board of editors, and frequently features articles on planning developments in the United States. Included in this issue are "Recent Housing Legislation in the U.S.A., England and Wales," by J. J. Clarke; "National Park and Monument Planning in the United States," by Carl Feiss; report on the new Department of City and Regional Planning at the University of California, by Professor T. J. Kent; "The Urban Revolution," by V. Gordon Childe; and "The Location of Manufacturing Industry in Great Britain."

## Critique on FHA-608 Housing

RENTAL HOUSING UNDER *FHA-608—New York Chapter, American Institute of Architects, 115 East 40th St., New York, N. Y. June 1950. 16 pp. $1.*

A biting attack on the inadequacies of the housing produced under Section 608 of the Federal Housing Act is documented in this monograph by the public-spirited New York Chapter of the American Institute of Architects. After one year of study, the Chapters Housing Committee characterizes housing designed under Section 608 as "at an equally low level of mediocrity."

Recommendations are made as to how future government-insured housing programs like that of FHA-608 can be improved in administration. Chapters in the illustrated monograph are devoted to planning standards, site planning, apartment plans, construction, and architectural treatment.

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HARRISON, N. Y.—A Master Plan for the Purchase Area. No. 3. Technical Planning Associates, Inc., 111 Whitney Ave., New Haven 10, Conn. May 1950. Map. 7 pp.

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NEW HAVEN, CONN.—Facts and Figures About the Port and City of New Haven. Industrial Development Committee, New Haven Chamber of Commerce, 152 Temple St., New Haven. Illus. Tables. 20 pp.

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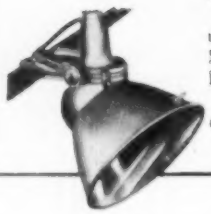
# Here's a CIVIC IMPROVEMENT that's paying more than its own way

The floodlighting of Munhall Recreation Park, Munhall, Pennsylvania, has proved popular with both sports enthusiasts and the municipal treasurer! The gate receipts from night games pay the cost of operating the floodlighting system—*and also for equipping the high-school football team.*

Originally the Park was floodlighted for night high-school football games—using six floodlighting towers. However the project was such a success that the Municipal and School-Board officials added four additional towers so as to floodlight a combination field, where both football and baseball could be played.

Naturally we are proud that the floodlights used at Munhall Recreation Park are General Electric's popular L-69 Sportslight.



**THE SPORTSLIGHT**—This is the floodlight used at Munhall Recreation Park, the G-E L-69. It gives more light per unit, more light per watt, is easier to install and cheaper to maintain than any other comparable unit. It's so good that four major-league parks use it, so economical that it's the favorite for sand-lot softball. Bulletin GEA-4835 gives complete description and prices.

**FREE PLANS AVAILABLE**—To help you with the planning of your recreation area, here is a free manual of plans. It's the latest word—all plans based on "NEMA-authorized engineering information." Not only lighting plans but lists of materials are included. There are plans for any sport from archery to volley ball—with special sections for football, baseball and softball. Write for bulletin GET-1284C.

*Apparatus Dept., General Electric Co., Schenectady 5, N. Y.*

GENERAL ELECTRIC

451-147

# How to Analyze Advantages and Liabilities of Natural Gas For Boiler-Plant Fuel

NATURAL gas as a fuel for a steam plant is ideal, according to Neal Thayer, Manager of City Water and Light Utilities, Jonesboro, Ark., if it meets these three requirements: (1) the supply must be adequate; (2) contract arrangements must be satisfactory, covering at least five years with clauses insuring continuous service; and (3) the price must be competitive.

Mr. Thayer outlined these points before the annual meeting of the American Public Power Association held recently in Washington. He emphasized the growing availability of this fuel, stating that 8,000 miles of natural-gas line were laid in 1949 and that, during 1949, more than 100 cities with a population over 50,000 either received natural gas for the first time or were furnished with a greater supply.

### Jonesboro Plant

The Jonesboro municipal electric plant converted from coal to gas over a period of five years. The plant has two old boilers with stokers removed and furnaces rebuilt for gas, one old boiler with stoker still in place but bricked over and burning gas, and two new Babcock and Wilcox boilers using gas exclusively.

There are certain advantages and liabilities in the use of natural gas, Mr. Thayer explained. The principal one is its cleanliness, eliminating ash, dust, cinders, smoke and soot, allowing the operators to make the plant as clean as a living room. Another is its simplification of operation, doing away with fuel and ash handling and replacing a relatively complicated stoker with a simple burner and gas valve. Still another advantage is its ability to recover fuel-gas heat without difficulty. And a final important advantage is its ability to eliminate the need of coal-storage piles, with its attendant capitalized investment of fuel.

The principal disadvantage in the use of natural gas, Mr. Thayer noted, is that it forms an explosive mixture when blended with air and, therefore, needs extreme care on the part of the operators. Air and possibly gas from small leaks must be purged completely from the furnace before the burner is lighted to avoid a furnace explosion. In case the flame goes out, the operator must get at the gas valve immediately. He must watch carefully for gas leaks to avoid explosions in the building itself. Also the possibility exists that the supply line can break and, therefore, some auxiliary fuel is needed.

The gas, Mr. Thayer explained, is a little less efficient than coal because of the fact that when it burns it forms water that turns to steam and carries away some of the heat.

The simplest conversion, he felt, is that of putting a gas burner in the boiler with the coal stoker. If this works well and the operators are encouraged to develop the fuel further, they can simply brick the stoker over if the furnace volume is great enough. As a final step they can remove the stoker and rely wholly on the gas. He quoted a figure of 1 cubic foot of furnace volume being needed per boiler horsepower, with 40 to 50 cubic feet of gas per hour required.

If the fuel cost of the gas per million Btu's is equal to that of coal, Mr. Thayer felt that the operating costs would be reduced greatly. In his case, he gets a price of 17 cents per million Btu's against a coal cost of 32 cents.

## *What is "Good" Control of Railroad Smoke?*

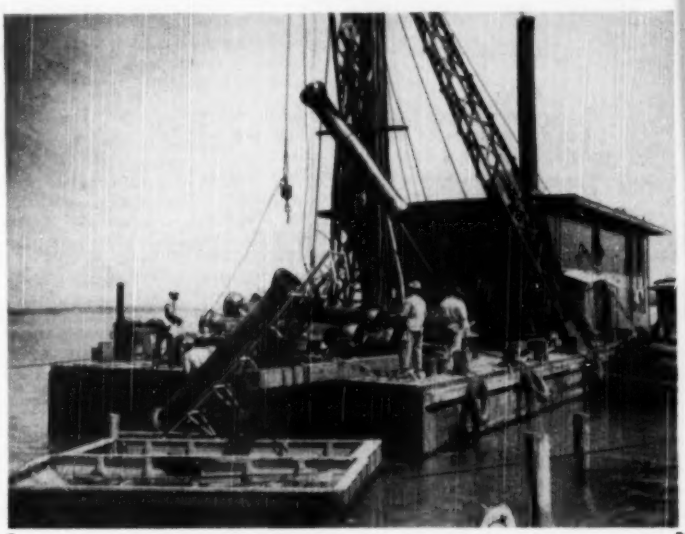
CHARLES GRUBER, Chief Smoke Inspector for Cincinnati, Ohio, came up with a set of answers drawn from the achievements in 22 cities, and related them before the recent annual meeting of the Smoke Prevention Association of America, in Montreal. He found that:

1. Eight cities set as their objective complete compliance with ordinances covering smoke from locomotives. Some, however, are willing to tolerate "slips." Wyandotte, Mich., has set occasional slips at 10% of the engines moving through the city. Cincinnati has a goal of 1% of the locomotive observations through the city.

2. Eight other cities look to the complete elimination of smoke. One says less than No. 1 Ringelmann by 1952; ½ Ringelmann by 1955; and past that year, all clear. The Ringelmann chart is a shading standard set by the U. S. Bureau of Mines and used widely to measure smoke intensity.

3. Four cities want all coal-fired locomotives replaced with diesels.

4. Two look forward to seeing all locomotives equipped with approved smoke-abatement devices.

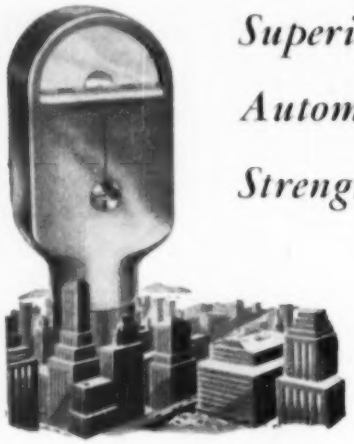
16" Water Pipe Line under John's Pass, Fla., being installed in 35 feet of water

**BOYCE COMPANY**

SUBMERGED PIPE LINES ALL OVER THE WORLD

Phone 3-2530 CLEARWATER, FLA.

# BOSTON CHOOSES MARK-TIME MANUAL PARKING METERS



*Superiority of Hurricane Manual over Automatic, plus Rhodes Financial Strength were deciding factors*

## LARGEST SINGLE ORDER EVER PLACED IN THE U.S.

Performance rather than words, deeds rather than promises were heavily on the side of the M. H. Rhodes, Inc. Boston was interested in the facts and went out to get them. Boston had already had parking meter experience. It had used automatic meters and had encountered maintenance problems, high cost of operation and public criticism. The automatic meters were replaced with manual meters and before buying additional meters, it was decided to make a complete survey of the entire parking situation.

The Boston Traffic Commission made an exhaustive survey and came to the conclusion that the manual parking meters were definitely more desirable than automatic meters particularly for large metropolitan areas, thus proving that Mark-Time Manual Meters are equally efficient in large as well as smaller communities.

In announcing the award Traffic Commissioner William Arthur Reilly of Boston, stated "Mark-Time Manual Meters were selected after a study had been made of all types and makes on the market, based on public convenience, simplicity of operation and ease and economy of maintenance."

There is no question about it, there are no substitutes for facts and when the facts produced by the Boston Traffic Commission were made known, not only are manual meters superior to automatic meters, but Mark-Time Hurricane Manual Meters are definitely the number one choice.

**M. H. RHODES, INC.** MARK-TIME **HARTFORD, CONNECTICUT**

## Fourteen New Towns

(*Continued from page 87*)

towns in the five years from 1946, only about £1,000,000 ($2,800,000) had been expended on development up to March 1949. The rate of development, however, is now expanding. People and industries are now being displaced as a result of the redevelopment of cities, and the need for new accommodation is likely to lead to a faster rate of development. The demand for factory space and for houses in all the towns is greater than can be provided for some years.

The slowness of development accentuates another criticism, which is that the administrative costs of some of the new towns' corporations are too high. This is partly due to the fact that the corporations organized their staffs for more rapid building than they were allowed to undertake. While there remains truth in the criticism, the major remedy is in the speeding up of development.

### Welwyn and Letchworth's Status

Some, including the present writer, have criticized the decision to take Welwyn Garden City (Sir Ebenezer Howard's second Garden City) out of the very capable hands of the company that had, since 1920, built it up to a population of 19,000 on a first-class plan and with an excellent balance of industry. The transfer has, however, been completed. Howard's land-value theory has been vindicated by the considerable surplus of capital available for the shareholders of the company on liquidation. The public corporation for Welwyn has also been made responsible for the nearby town of Hatfield—one of the reasons advanced for the take-over.

Howard's first garden city (Letchworth) has, after some ministerial hesitation, been left in the hands of the limited-dividend company that has developed it to its present population of 22,000.

The plans of the new towns have been worked out by planning staffs appointed by each corporation after careful study of their sites. They vary in many ways, and most of them are of great interest. Not all the ideas that the various teams have thrown up will prove practicable, or even popularly acceptable. But there is a refreshing spirit of adventure and originality about them which, when pruned by experience, will undoubtedly contribute much to the improvement of town development in Britain and the world.

## *Los Angeles "Smog" Abatement Shows Progress*

OVER 300 violators a month are being cited in the drive to eliminate "smog" of Los Angeles, Calif., according to Gordon P. Larson, Director of the Los Angeles County Air Pollution Control District, who spoke recently before a meeting of the American Society of Civil Engineers. Since opening of the drive in April 1948, cooperation of industry has been secured so that it has been necessary to take less than five cases each month to the courts for enforcement.

When the Pollution Control District was formed, some 822 tons of sulphur dioxide entered the Los Angeles atmosphere each day. This chemical, released by refineries, chemical plants, and the burning of fuel oil by other industries was oxidized in the Los Angeles sunlight and became the throat- and eye-irritating sulphuric acid. Another 100 tons of metallic oxide fumes were thrown into the air each day by foundries and large steel plants in this area. Dusts and oil mists add their share to the pollution from rock processing plants, milling, coffee roasting, manufacturing of roofing materials, and paint-spraying.

The peculiar atmospheric pattern of Los Angeles, termed a "temperature inversion," held the pollution in the area. Clouds of pollution spread throughout the Great Basin, one portion flowing up the San Fernando Valley and the other moving eastward along the foot of the San Gabriel and San Bernardino Ranges toward San Gargonio Pass. Frequently, in the late afternoons in summer, the "smog" could be seen streaming into the desert through this pass, which is some 90 miles from Los Angeles.

With full police power, the Control District has discovered sources of pollution, provided valuable technical advice to violators and inspected the installation and operation of control devices. Some industries discovered they could recover valuable by-products. Sulphur is now being produced in one plant at the rate of 50 tons a day, from gases which were formerly burned to produce 100 tons of sulphur dioxide in the atmosphere. An additional unit will double this capacity. Metallic fumes now collected amount to many tons per day.


# ALABAMA PIPE COMPANY

***General Sales Offices***

## ANNISTON, ALABAMA

*TAKES* **pride in announcing the resumption of pressure pipe manufacture at its recently completed modern plant located at Anniston, Alabama. This plant produces Super deLavaud cast iron pipe, centrifugally, in modern long lengths.**

***Inquiries addressed to our nearest sales office will be appreciated.***

**122 So. Michigan Avenue**
**Chicago 3, Ill.**

**3122 Coleman Road**
**Kansas City 2, Mo.**

**350 Fifth Avenue**
**New York 1, N. Y.**

# Smooth Steel Poles

## *a good investment for your city*

## *—from any angle*

WHAT sort of an impression does your town make on the strangers who daily motor down its streets? Do they remember it as a modern, progressive looking city? Or did they get the impression that it was a pretty drab "burg" because its streets were still lined with ugly old-fashioned poles?

What the home folks think, is mighty important, too. Nothing will do more to boost their pride in the old home town than the replacement of obsolete, irregular poles with modern, good-looking tubular steel standards.

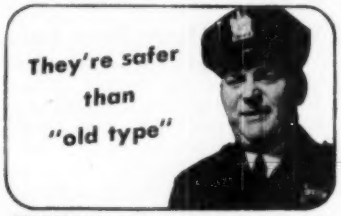
But an "up and coming" look is but one of the advantages you give your town through the adoption of steel standards for all street lighting, power lines, and other commercial pole purposes. And these other advantages (they're listed briefly in the column at the right) contribute just as much to the good reputation of a city.

In choosing new poles, you can make no better selection than NATIONAL Seamless Tubular Steel Poles. Every U·S·S NATIONAL Seamless Steel Pole is made by the seamless process . . . a solid billet of the finest quality steel is pierced to form the basic tube . . . there is no weld . . . no line of potential weakness . . . smooth, clean and trim looking. There's absolute uniform wall strength from end to end. For detailed information, write for Bulletin No. 14. Please address your requests to National Tube Company, Frick Bldg., Pittsburgh 19, Pa.

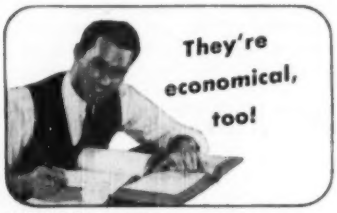
NATIONAL TUBE COMPANY, PITTSBURGH, PA.
COLUMBIA STEEL COMPANY, SAN FRANCISCO, PACIFIC COAST DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

**CITY MANAGERS** know that the first things businesses look for when considering a new location are signs of a town's progressiveness. Streets lined with smooth steel poles say yours is a live place!

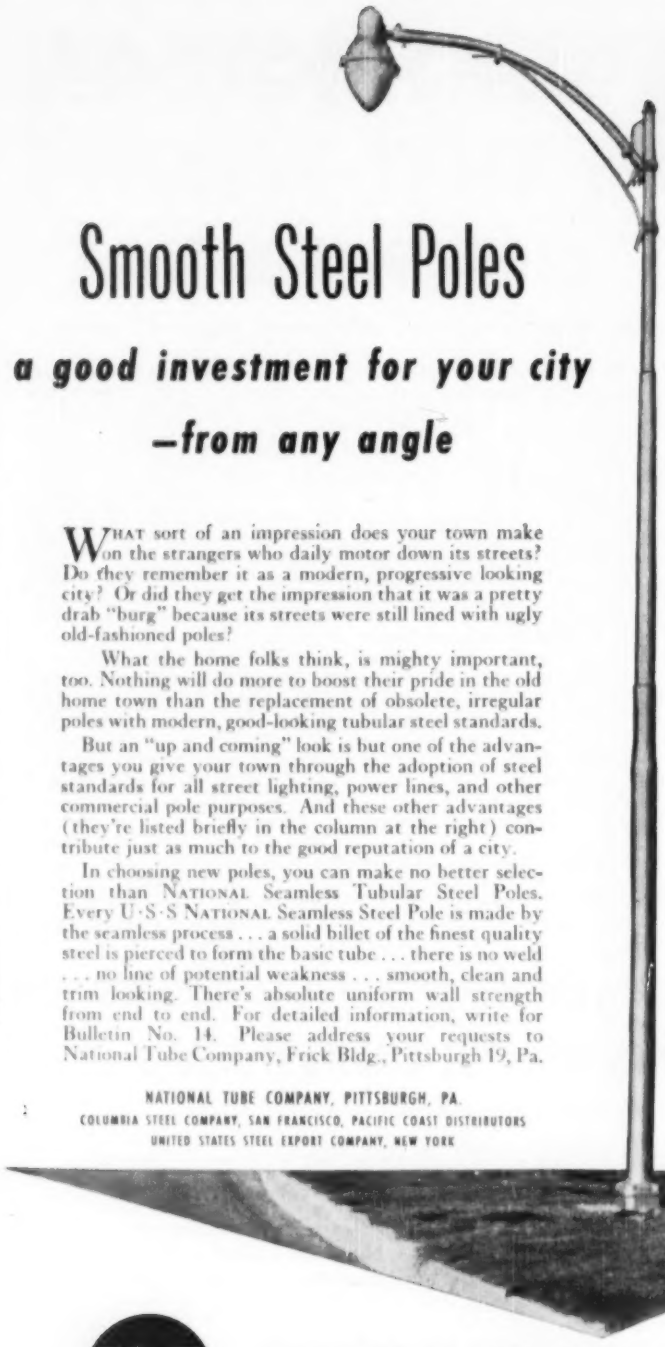
**LEADERS OF WOMEN'S CLUBS** recognize the importance of beautification programs. They know, too, that no improvement contributes more to a town's good appearance than the replacement of all unsightly poles with modern steel standards.




**POLICEMEN** see first hand just how hazardous many old types poles are. If they had their way, every pole would be a steel pole . . . and there would be fewer of them. NATIONAL Seamless Steel Poles can be spaced at wider intervals. And they offer less visual obstruction.




**PURCHASING AGENTS** say steel poles go farther because they can be spaced at wider intervals. Thus fewer poles are required for a complete replacement job. They're easy to rig and erect with minimum manpower, and except for an occasional paint job, require no maintenance.



USS **NATIONAL *Tubular* STEEL POLES**

UNITED STATES STEEL

## *Mount Clemens Sewage Treatment Facilities*

*(Continued from page 87)*

issue was proposed in the total sum of $2,000,000, made up as follows:

| | |
|---|---|
| Construction | $1,616,000 |
| Contingencies and engineering | 244,000 |
| Capitalized interest | 140,000 |
| Total | $2,000,000 |

### Services Charges for Financing

It was proposed to finance the project primarily through collection of utility charges to be paid by the users of the system. The annual amount necessary to be raised through such charges, to cover operation, maintenance, and debt service, with sufficient coverage of debt services to make the bonds attractive to investors, was determined to be $215,000. Of this amount, $186,000 will be raised through utility rates computed on the basis of water consumption; $9,000 from the mineral bath industry, and $20,000 from the city's general fund.

The resulting utility rate is considerably higher than normally encountered where facilities were constructed before the war. Considerable opposition was expected when the proposed rates were determined and made public. Very few complaints have been made, however.

The rate schedule now in force, based on metered water consumption, is as follows:

| *Monthly Charges* | |
|---|---|
| First 500 cu. ft. | $1.60 |
| Next 1,500 cu. ft. | .27 per 100 cu. ft. |
| Next 4,000 cu. ft. | .23 per 100 cu. ft. |
| Over 6,000 cu. ft. | .20 per 100 cu. ft. |

Minimum charge, $1.60 per month.

This rate schedule is about 50% higher than that paid for water service by a householder using 800 cubic feet per month, and almost 76% higher for a larger consumer using 10,000 cubic feet per month.

Charges collected from the mineral bath industry are based on a flat rate of 3 cents per bath.

The rates were put in effect on October 1, 1949, and collections to date have run somewhat in excess of anticipation. Several areas outside the present city boundary will become tributary to the plant when it goes into operation, so that receipts from these areas will serve to increase further the total collections. It is accordingly expected that it will be possible to make a substantial reduction in the rate schedule within two or three years without reducing the original coverage on debt service, and while still accumulating reasonable surpluses. This expectation is also supported by the fact that through exercise of all reasonable economies, approximately $150,000 of the $2,000,000 bond issue will remain after the project is completed, and will be available for calling outstanding bonds, or for purchase on the open market.

This project represents a major undertaking for a small city, involving the assumption of a debt about $125 per capita and annual operating and maintenance costs of $2.60 per capita, principally for the protection of water resources and recreational advantages in downstream areas.

### Personnel

The project is in general charge of Mr. E. L. Pettingill, City Engineer. Mr. Harry E. McEntee, Superintendent of Water Works and Sewers, will be in charge of operation. Jones, Henry & Schoonmaker, Consulting Engineers, of Toledo, Ohio, prepared the plans and specifications and supervised construction. Mosser Construction, Inc., of Fremont, Ohio, are the contractors on the treatment plant. The combined firms of Mancini Construction Company and Miller-Thompson Company, of Detroit, Mich., built the sewers; and McCullough Construction Company, of Flint, Mich., were contractors on the pumping stations.


**—M-SCOPE—**
**PIPE LOCATOR**

**TYPE AB — 1950 MODEL**

- Metal Cased Cabinets
- One Man Operation
- Unsurpassed Efficiency
- Fully Guaranteed
- Immediate Shipment

**PRICED ONLY $149.50**

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***Illustrated Brochure Upon Request***

THE J. M. CLEMINSHAW CO. APPRAISERS FOUNDED 1923 UNION COMMERCE BLDG., CLEVELAND

**Our Twenty-Seventh Year**

***"Public Appraisal Service is a Public Trust"***

# Communities Every

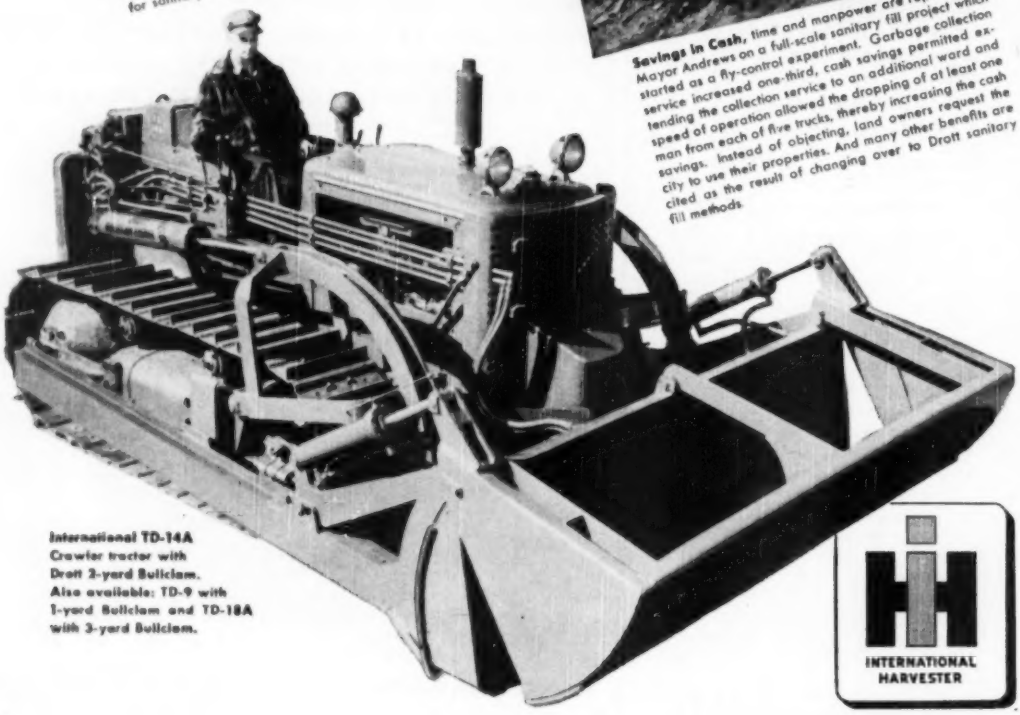
## THE DROTT

DALLAS, TEXAS

**Low Cost Disposal**—In a single year, more than 70,000 tons of garbage and 104,000 cubic yards of brush are buried in sanitary fills at a cost of 43½ cents per ton. Starting with three Drott-International Tractor-Bulliclam units in 1944, Dallas now has nine of these in operation. Land owners grant free use of their lowlands for sanitary fill operation, to get their lands raised and level.

CHARLESTON, W. VA.

**Savings in Cash,** time and manpower are reported by Mayor Andrews on a full-scale sanitary fill project which started as a fly-control experiment. Garbage collection service increased one-third, cash savings permitted extending the collection service to an additional ward and speed of operation allowed the dropping of at least one man from each of five trucks, thereby increasing the cash savings. Instead of objecting, land owners request the city to use their properties. And many other benefits are cited as the result of changing over to Drott sanitary fill methods.



**International TD-14A Crawler tractor with Drott 2-yard Bulliclam. Also available: TD-9 with 1-yard Bulliclam and TD-18A with 3-yard Bulliclam.**

INTERNATIONAL HARVESTER

# *where Recommend...*

## INTERNATIONAL *Sanitary Fill Builder*

COLUMBUS, GA.

**$58,400 Saved** in investment, and an operating cash saving of 64 cents per ton of refuse handled, are the direct result of converting from incineration to sanitary fill methods of disposal, according to public health engineer, J. A. Wilman. "No fly, rat or mosquito breeding; no odors or smoke," he says.

RIVERSIDE CAL.

**The Changing Scene** from an insect and rat-infested dump of garbage and rubbish piles, to the clean, Drott *ramp-type sanitary fill* is portrayed in this photograph. The ramp method, introduced by Drott, cuts out all waste motion and last time in sanitary-fill construction and operation. The finished fill will be level with elevation at left.

Your community, too, can save money, guard public health and make wastelands valuable while disposing of refuse and garbage. The *One-man Sanitary Fill Builder*—an International Crawler tractor and Drott Bullclam combination—will do the whole job.

### No Other Equipment Needed

Because this one machine does the entire job of sanitary-fill construction and operation—digging, compacting, covering and finishing—no auxiliary equipment is needed. No burning of refuse, either!

### A Simple, Sanitary Operation

Daily accumulations are buried, compacted and covered in "cells"—never left exposed for pests to breed in. The Drott-International tractor and bullclam does it all, systematically and at a cost that returns valuable cash savings. Open-dump and burner methods are—by comparison—expensive and offensive. Eliminate them. Gain the valuable benefits Drott and International can bring your community, with a modern sanitary fill.

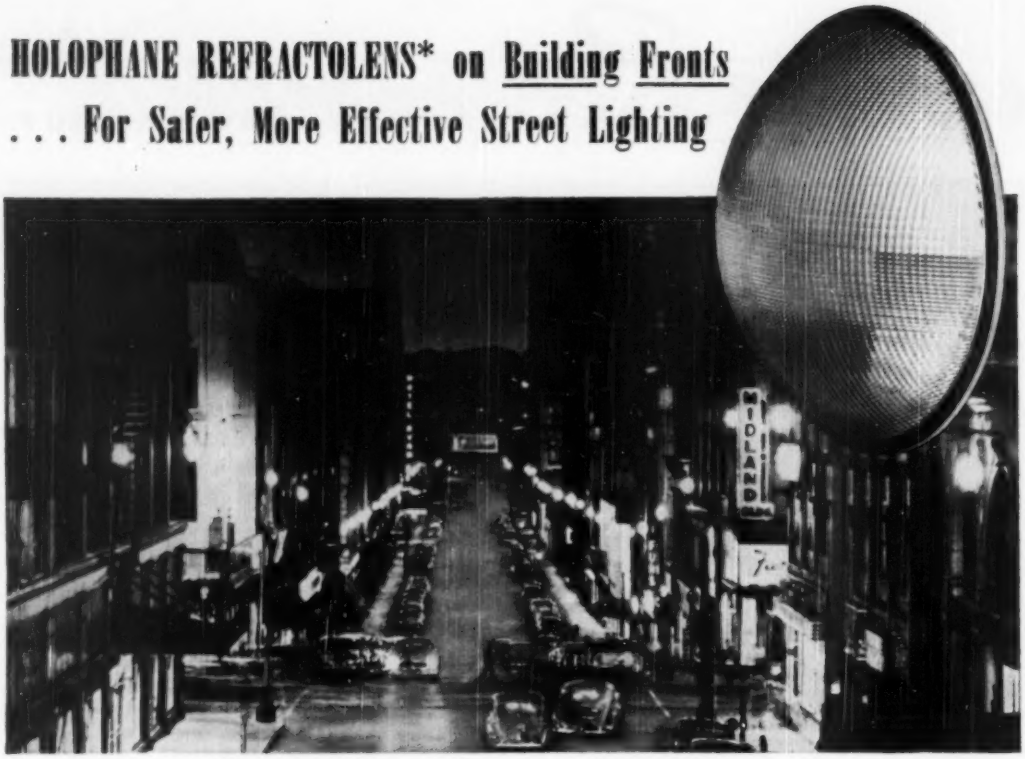
For complete information, without obligation, write Drott Manufacturing Corp., Milwaukee 8, Wisconsin—or contact your International Industrial Power Distributor.

**DROTT MANUFACTURING CORP.**
**Milwaukee**

**INTERNATIONAL HARVESTER COMPANY**
**Chicago**

# DROTT-INTERNATIONAL
## TRACTOR AND BULLCLAM COMBINATION

# HOLOPHANE REFRACTOLENS* on Building Fronts . . . For Safer, More Effective Street Lighting




*Street Scene, 1950 . . . In St. Paul, Minn., Business Section*

26 Feet above street level . . . the Holophane Refractolens (upper-right) is mounted to the building front. The double-refracting lens (20" diameter) is designed to resist heat, shock and deterioration.

***"The new lights, providing about 10 TIMES more illumination on the street, are far superior to the old lights from the standpoint of glare" . . .***

From an official report of St. Paul Engineers

When St. Paul authorities envisioned an altogether new method of illuminating streets in the business section, they called in street lighting consultants. Result: the new Holophane REFRACTOLENS set into a General Electric fixture, and mounted flush to the front facades of buildings for twenty-two midtown blocks . . . Outstanding advantages: cheerful white light 10 times brighter than before; elimination of obstructive lamp posts and brackets; remarkable uniformity of light; maximum visibility for both motorist and pedestrian; reduction of night traffic accidents; stimulation of retail business . . . Holophane Street Lighting Engineers will send, without obligation, engineering data and complete details of "St. Paul's Whiteway".

*Reg. U. S. Pat. Off.

Holophane

**HOLOPHANE COMPANY, INC.**

Lighting Authorities Since 1898 • STREET LIGHTING DEPARTMENT, NEWARK, OHIO

THE HOLOPHANE COMPANY, LTD., THE QUEENSWAY, TORONTO 14, ONTARIO

# News and Illustrations

**Items of interest to city, town and county officials and others concerned with the economical construction and efficient operation of public improvement undertakings**

## Modern Street Signs for Memphis

New, easily read, 7-by-35-inch porcelain enamel street signs, manufactured by the Ferro Enameling Co., 1100 57th Ave., Oakland 3, Calif., have eliminated traffic hazards on recently completed 6-lane super streets in Memphis, Tenn., at no extra cost, according to Commissioner of Streets O. P. Williams, Asistant City Engineer Robert Carpenter, and Inspector Hal Allen, Director of Traffic. Replacing small street markers, the new street signs enable drivers to read the names of intersecting streets at a distance sufficient to show safe turns.

### Expanded Planning Program

Modernization of highways and street signs is only a part of the Memphis city planning program, which has included the construction of the 6-lane "E. H. Crump Boulevard" to serve the recently completed multi-million-dollar Memphis and Arkansas bridge. "We of the city administration," says Commissioner Williams, "take great pride in offering our citizens the most expansive public service of any American city, and at the same time, we maintain our low tax rate. To do this, we must examine every purchase with the utmost care and buy the highest quality materials at a consistently low price."

### Aid Traffic Movement

Inspector Hal Allen also expressed his approval of the street signs. It is his opinion that they will aid traffic movement by eliminating the necessity for drivers to swing into and away from the curb to read street names, as well as eliminating the unnecessary traffic caused by wrong turns.

In the past 12 to 15 years, the city of Memphis has been awarded either first or second place each year in Public Health, Cleanliness, Noise Abatement and Fire Prevention by the U. S. Chamber of Commerce and other national organizations.

**Inspector Allen and Commissioner Williams inspect new Ferro street signs for the City of Memphis.**

## Pontusco Buys United Concrete Pipe Corp. Will Manufacture Water and Sewer Pipe

The Pontusco Corp., Burlington, N. J., has purchased the United Concrete Pipe Corp. of Baldwin Park, Cal. United manufactures vertically poured reinforced concrete pressure pipe either with a steel cylinder, a cage of reinforcing steel or both. They also centrifugally cast pressure pipe either with a steel cylinder or cage reinforcement. Concrete pipe is cast without reinforcement for very low pressure service.

Pipe is made in a wide range of diameters from 4 to 180 inches. The smaller pipe is more generally used for sewer service and the larger sizes for water lines, sewers and irrigation purposes.

Pontusco, a Delaware Corporation with offices presently located at Burlington, N. J. and New York, N. Y., is jointly owned by the United States Pipe and Foundry Co. and by Compagnie de Pont-a-Mousson of Nancy, France. It was formed in 1946 for the purpose of manufacturing concrete pipe and associated products in North America, Central America and some countries in South America.

Other pressure pipe plants owned by United are located at Stockton, Cal. and Pleasant Grove, Utah, and the company also operates seven plants in California for the manufacture of low pressure concrete pipe for sewer, drain and irrigation service.

## Shepard Heads ARBA Municipal Division

George M. Shepard, chief engineer of the St. Paul, Minn., Department of Public Works almost continuously since 1922, has been named acting president of the Municipal Division of the American Road Builder's Asso.

He will fill the unexpired term of Henry H. Kranz, who died early in June shortly after beginning his second year as president of the division.

## Stainless Steel Reflectors

An improved 20-inch radial bowl reflector made of 18-8 stainless steel, manufactured by the Joslyn Mfg. and Supply Co., 20 N. Wacker Drive, Chicago 6, Ill., represents an addition to the line of reflectors for open street lighting luminaires.

Use of this durable, corrosion-resistant alloy insures permanency of a good reflecting surface. It has no enameled surfaces to chip and is easy to clean. The manufacturer emphasizes its ideal application for salty atmospheres, industrial areas, or for conventional installations where a low cost, permanent unit is desired. These reflectors will fit standard street heads.

## Straighten Bent Meter Posts

A new metal post straightener is offered by H. K. Porter, Inc., Somerville, Mass., for use on parking meter posts, metal fence or sign posts, and similar installations.

Powered by a 10,000-pound-capacity hydraulic jack, the unit operates in various positions. The jack has a full swiveling handle to permit pumping at the most convenient angle and lever-operated valve for quick control.

# Good Light... PLEASANT DREAMS

SCREAMING brakes . . . a sickening crash! Crime . . . people in trouble . . . delinquency . . . vandalism . . . fright! You'll find these nightmares prevalent *too* often in communities where there's too little light. But in areas well lighted, like that above, such things seldom if ever happen. Good street lighting is cheap at any price.

And it's so *easy* to have adequate, efficient light with modern fixtures supported by Monotube Tapered Steel Poles. Monotubes, product of many years' experience, are designed for easy installation . . . . and for lasting service with a very minimum of maintenance as the years go by. Monotubes are also noted for their attractive appearance. They come plain or fluted, are available in heights and designs appropriate for *any* location or condition.

If you are looking ahead to modernizing or extending your street lighting facilities, be sure to get *all* the facts on Monotubes. For complete information, write The Union Metal Manufacturing Company, Canton 5, Ohio.

**UNION METAL**

*Monotube Street Lighting Standards*

## Paul H. Davey, Jr. Elected Vice President

Election of Paul H. Davey, Jr., former production manager, as vice-president in charge of production of the Davey Compressor Co., Kent, Ohio, was announced recently by Paul H. Davey, Sr., president. A Yale Engineering College graduate, Mr. Davey, Jr. had held a number of positions in the Davey organization, prior to his election.

P. H. Davey, Jr.

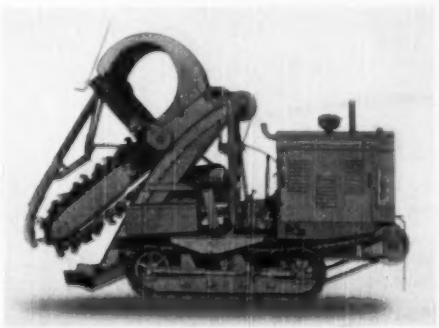
## New Ditching Machine

The Findlay Div. of Gar Wood industries, Inc., Findlay, Ohio, has announced its New Buckeye Model 402 Service Utility Ditcher, designed to be used for house service connections, telephone lines, gas, water or electrical lines, railway signal cable, foundation footings and other miscellaneous ditching jobs that fall within its width and depth of cut. On 2-year tests this model has dug ditch in Wisconsin frost, New Orleans gumbo, Baltimore sand and gravel and California caliche and wet clay.

The new machine has a maximum depth of 4 feet and maximum cutting depth of 8 inches. Powered by a 47-hp gasoline engine, it has a top digging speed of 1,308 feet per hour. A heavy duty 10-inch over-center type clutch enables the operator to disengage the clutch, leave the machine in gear, remove his hand from the clutch lever and still keep the motor running.

Completely mounted on Buckeye non-clogging self-cleaning crawlers, which are provided with a spring release to prevent damage, the ditcher can work on hillsides or with one crawler in the gutter and the other in the parkway. This is accomplished by the left-hand crawler which is adjustable vertically 8 inches.

The heavy duty boom is of two-piece box type construction, equipped with an easily adjusted digging chain. Replaceable Quick-Change Rooter Bits, are wedged into cast alloy steel buckets and mounted for cutting clearance. A new telescoping shoe post, with spring-loaded safety device, automatically retracts when stabbing holes, providing quick reset to digging.



**Sidehill digging is no problem for this new self-cleaning Buckeye ditcher. Crawling adjustment allows it to operate efficiently at an 8-inch angle.**

## Wellsville's Meter-ads—A Correction

The parking meters of Wellsville, N. Y., are equipped with Meter-ads supplied by Meter-Ad Corp. of America, 6 State St., Rochester 4, N. Y. This installation was noted on page 189 of the July 1950 issue but was incorrectly ascribed to a different meter-advertising company.

The Meter-ad, as shown, is a patented aluminum device to display advertising on top of parking meters of any type. Meter-Ad Corp. of America installs, maintains and services the devices and equips them with local or national advertisements.

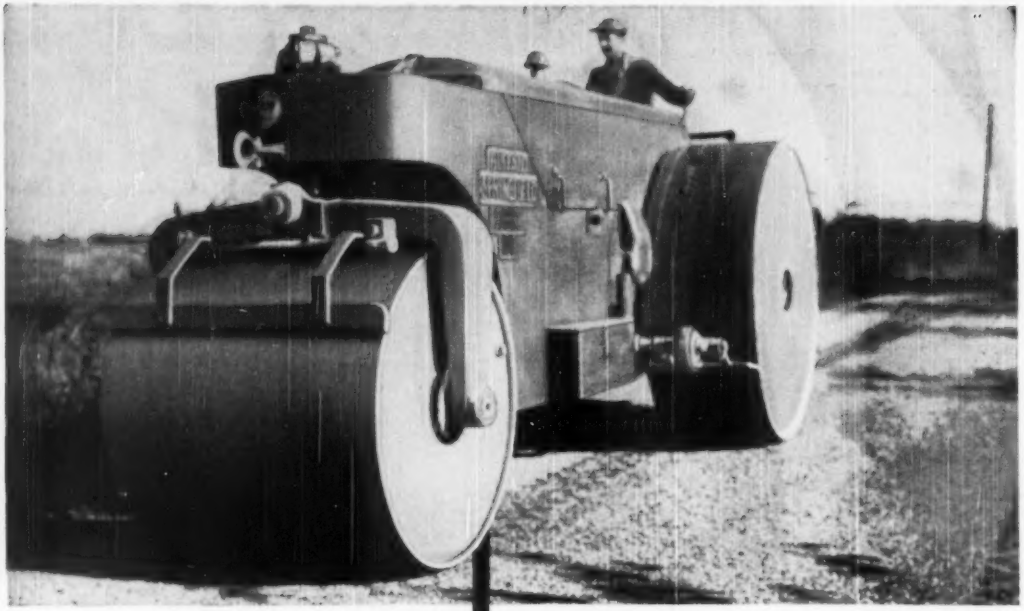
Mayor Thomas C. Martin informs THE AMERICAN CITY that revenue to the municipality from this service during the last half year has amounted to around $100 per month. Expressing complete satisfaction with the service he says, "There is no trouble or worry, the ads are generally atractive and an aset to the popular parking-meter service, and the check arrives every month."

Meter-ads were recently installed on the 412 parking meters of Sheridan, Wyoming, and installations in several other communities are scheduled for an early date.

## Paints and Primers For Water Tanks

The silica graphite pigment used in Dixon primers and paints is a flat, unctuous, microscopic graphite crystal combined with silica. When refined by the Paint Sales Div. of the Joseph Dixon Crucible Co., Jersey City 3, N. J., it produces an inert paint pigment which is not affected by the ultra-violet and infra-red rays of the sun—rays that are particularly destructive to many paint pigments. The flake formation of the silica graphite pigment produces a lamination within the paint film which forms a coating that is impervious to moisture; the result is that corrosion is retarded. The unctuous property of the silica graphite pigment prevents it from becoming brittle.

The coatings are nontoxic and will not impart an odor, taste, or coloring to the water. Because of its opacity and great resistance to deterioration, the use of flake silica graphite as a paint pigment in preference to other types was advocated by U. S. Department of Commerce Circular 6123.



# WORKHORSE
## 3-Wheel Roller Style

Buffalo-Springfield variable weight 3-wheel rollers are work-horses by any definition. No longer single-purpose machines, these new units far outstrip "old Dobbin" in ability to perform many different jobs with efficiency and economy.

For example, the Buffalo-Springfield model VM-18 is basically a 5-ton machine — but that's not all. It can perform work calling for a 6-ton or even a 7-ton machine. The VM-18's wide job versatility is made possible by ballast type rolls. Heavy steel head plates, welded to the roll tires and hubs, form water-tight compartments. Filling and drain plugs in the outer heads permit filing the rolls with water to increase the roller weight. If even higher compressions are desired, shovel openings with bolted water-tight covers are provided so a mixture of water and sand can be used as the ballasting material. Thus — the VM-18 can be adapted to meet compression requirements that would *normally* call for three fixed capacity models.

Equally important, the roll surfaces are machine-finished for uniform smoothness and curvature, which means the VM-18 can also be used for finishing work. Thus, one variable weight 3-wheel roller is used for many applications and reduces the equipment requirements on any road building job.

There are seven Buffalo-Springfield variable weight models covering a range from 5 to 17 tons. Your nearest distributor can give you complete details on the model best suited to your needs. See him today.

*Mail This Coupon Today*

**THE BUFFALO-SPRINGFIELD ROLLER CO.**
**Dept. H-8, Springfield, Ohio**

☐ Please send me Catalog S-60-50 describing the right model for my requirements. ☐ Notify Distributor to call.

NAME .....

ADDRESS .....

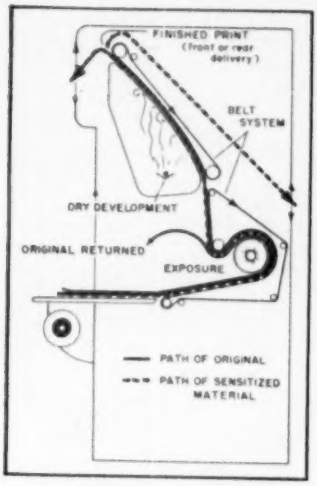
CITY ..... STATE .....

BUFFALO SPRINGFIELD
SPRINGFIELD, OHIO

## For Copying Anything Typed, Drawn, Written

Any paper or drawing on translucent material is placed on a sheet of the desired type of Ozalid sensitized paper, cloth, or foil, and fed into an Ozalid machine. In as little as 25 seconds you have a completely dry, positive, exact duplicate of your original in black, blue, red, or sepia lines depending upon your choice of Ozalid material.

Because there are no potash baths, water baths, or driers, the machine




**How the process works.**

may be operated by someone entirely inexperienced.

Copies of any length may be made directly from translucent originals, and from opaque originals by using an intermediate step.

Four models are made by the Ozalid Div. of the General Aniline & Film Corp., 1600 Ansco Rd., Johnson City, N. Y.; the Streamliner, the Ozacoupler, the Printmaster, and the Super-B for really large-scale production.

## Hammond Iron Opens New Bristol, Pa., Plant

A new, modern plant at Bristol, Pa., with main line railroad siding, occupying 16 acres near deep-water docks, almost doubles the fabricating capacity of the Hammond Iron Works. Featured new fabricating equipment in this plant is a planer with a sixty-foot bed, for gang-planing the largest-size steel plates.

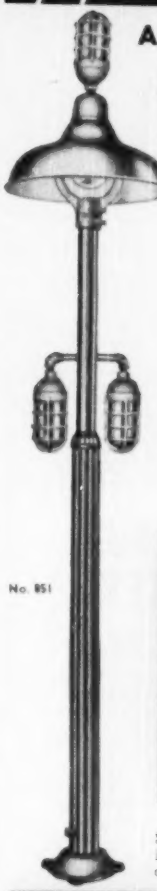
The new plant now enables the Hammond Iron Works to fabricate storage tanks, stacks, standpipes, breechings, steel and alloy plate of all sizes and design, for erection in any part of the world. The main plant and offices of the company are at Warren, Pa.


Improve THE LIGHTING of Your Safety Islands

AN OUTSTANDING Revere ELECTRIC MFG. CO.

**Contribution Toward Solving a Stubborn Problem**

**REVERE Engineers constantly on the alert toward betterment in illumination, have effectively solved the old problem of illuminating Safety Islands. Two types are offered . . . consisting of Steel Standards of studied height to properly illuminate the bumper and furnish obstruction lights that can readily be seen by the motorist.**


No. 851

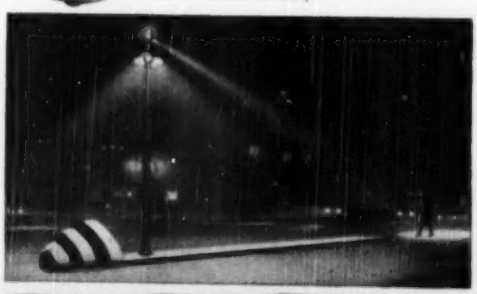
Standard No. 852 has an auxiliary spot light to illuminate the traffic officer's station. High efficiency is offered, coupled with greater safety to pedestrian as well as to the motorist.

***Now is the Time to Consider Installation***

With long winter days just ahead—don't let another season go by without improving your lighting.

WRITE FOR FULL PARTICULARS.

Showing how Unit No. 852 effectively illuminates the island and spotlights traffic officer when on duty.



No. 852

REVERE ELECTRIC MFG. CO.

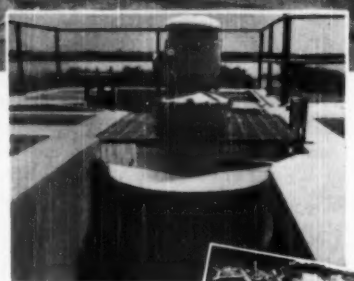
6015 BROADWAY — *Indoor and Outdoor Lighting Equipment for Every Requirement* — CHICAGO 40, ILL.

## FOR EVERY STEP OF YOUR SEWAGE TREATMENT PROCESS

WHEN you specify INFILCO Sewage Treatment Equipment, you get more than just equipment. Actually, you specify over 50 years experience in the design and manufacture of a *complete range* of water, sewage and waste treatment equipment.

You have *one source* to depend upon for experience in both chemical and biological treatment . . for the major equipment items as well as the important control devices. And by providing a *complete range* of sewage treatment equipment INFILCO offers the all-important advantage of *undivided responsibility!*

A complete laboratory and staff of competent engineers are available for making recommendations and reports to the consulting engineer or his client. It is, of course, intended that this service shall cooperate with the work of your engineers. When considering your next sewage treatment plant, or the modernization of an existing one, consult your Telephone Red Book. Call in your nearest INFILCO Field Engineer!



**SEND FOR . .**

*Bulletin No. 60-C. It illustrates and describes many items of Infilco Equipment.*

**INFILCO**

• BETTER WATER CONDITIONING AND WASTE TREATMENT SINCE 1894 •

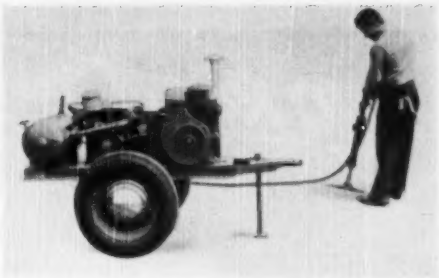
**INFILCO INC.**

GENERAL OFFICES: 325 WEST 25th PLACE • CHICAGO 16, ILLINOIS

SALES OFFICES IN TWENTY SIX PRINCIPAL CITIES

WORLD'S LEADING MANUFACTURERS OF WATER CONDITIONING AND WASTE TREATING EQUIPMENT

## Portable Air Compressors Introduced By Worthington



The new trailer-mounted air compressor.

The Worthington Pump and Machinery Corp., Harrison, N. J., has introduced two new Blue Brute portable air compressors, both hand truck and trailer models, which are two-stage, air-cooled, with 30-cubic-foot capacity at 100 pounds pressure and a maximum operating pressure of 150 pounds.

The machines are suited for spraying, trenching, digging, breaking, tamping, and inflation of large tires. The machines also operate air tools, do light blasting and chipping, and power paint guns.

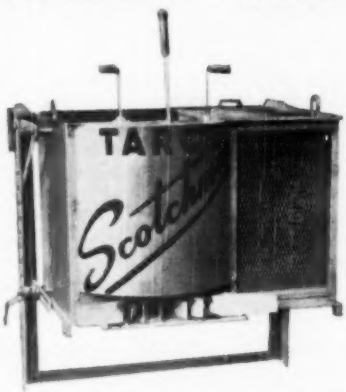
Powered by a hand-cranked, air-cooled gasoline engine, the compressors have Worthington's patented feather valve, suction valve unloading, and a general design readily accessible for easy maintenance. They are equipped with air maze oil bath cleaners and standard ASME air receivers. A protective all-steel canopy is also available.

## Link-Belt Announces Boost In Public Relations

The Link-Belt Co. announces that its public relations activities are being expanded, and that a separate Public Relations Department has been established at executive headquarters, 307 N. Michigan Ave., Chicago, Ill., headed by Harlan B. Collins, Secretary, and Russell B. Kern, Editor of Link-Belt News.

Bertram V. Jones has been appointed Executive Assistant Advertising Manager to Julius S. Holl, Advertising Manager, assisted by John F. Kelly, Assistant Advertising Manager.


**LOWER ICE AND SNOW REMOVAL COST**




With a "Scotchman". Use clear salt applied as it should be: in a thin, wide, "bird-shot" melting pattern—four to five bags of salt to the mile.

Insures clean plowing. Cuts bulk in half. Eliminates clogged culverts and catch basins. Stops brine damage complaints. Provide SAFE, BARE pavements at *lower cost* with a Tarco "Scotchman".

CONTROL of direction, width, and rate of speed.

WEATHER-PROOFED ENGINE ● ELECTRIC STARTER

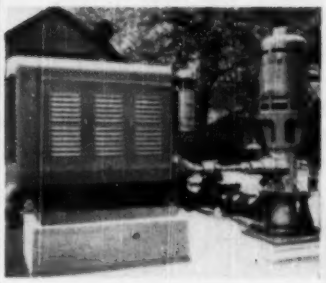
BAGGED or BULK SALT ● USE on ANY TRUCK or PICKUP

*Literature? Demonstration?*

**TARRANT MFG., CO.**
**EAST AVE., SARATOGA SPRINGS, N. Y.**



**24 Hour POWER Service**



**JOHNSON**
**Combination DRIVES**

**CONTINUOUS WATER SUPPLY** . . . protects the public health and reduces fire hazard.

**FLOOD DAMAGE** . . . insures 24 hour operation of drainage pumps in any emergency.

**RESERVE POWER** . . . will transmit additional power to meet emergency requirements.

**SEWAGE** . . . the ideal Drive for continuous 24-hour constant service.

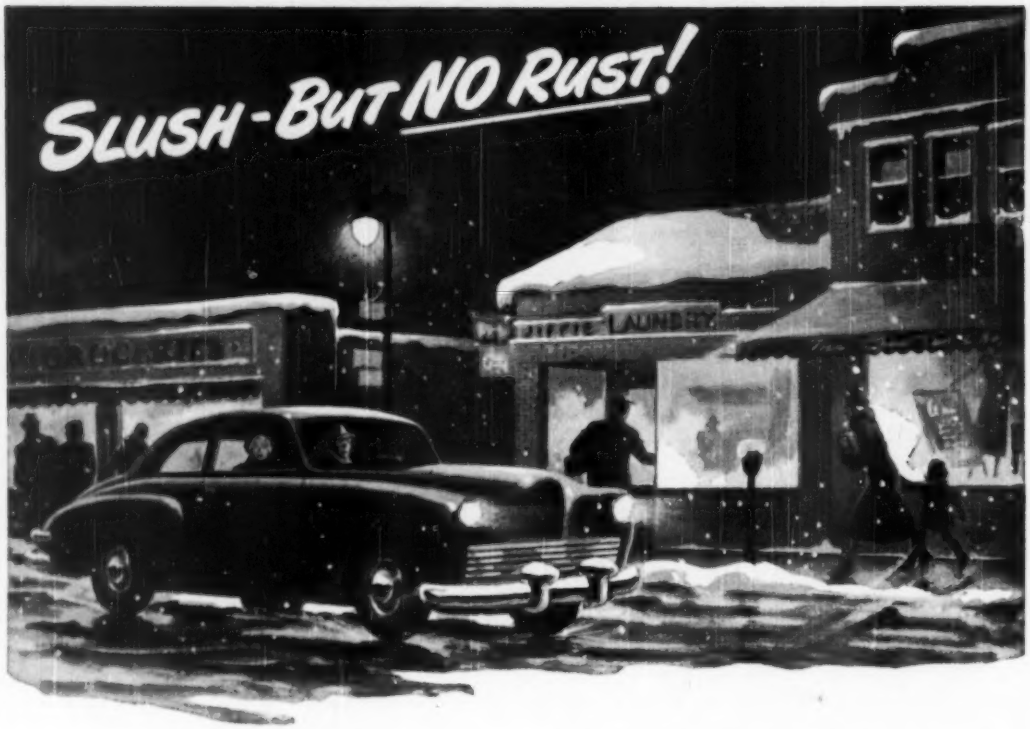
**ADAPTABLE** . . . available in a number of sizes, types and ratios to meet varied application.

**WORLD WIDE ACCEPTANCE** . . . in recognition of dependable service, economy of operation and maintenance. Hundreds in use by municipalities.

**INVESTIGATE NOW** . . . get the facts on the Johnson Right Angle Gear Drive. Send for illustrated catalog.

PHOTO: Installation at Red Bank, New Jersey. Courtesy Layne-New York Company.

***JOHNSON GEAR***
**AND MANUFACTURING CO.**
*"45 years of Engineering Service"*
8th & Parker Streets • Berkeley 10, Calif.




When snow, sleet and freezing rains hit your city, your first consideration is to keep traffic moving safely and maintenance of ice-free streets with salt, calcium chloride, or mixtures of these with abrasives, results in rust-forming slush. Your taxpaying motorists wail over their rusted car bodies, and you are concerned with the damage to gratings, bridges and other steel construction in street and highway systems.

Now, as more than 50 communities proved to their own satisfaction last winter, there is a way to reduce these rust headaches and at the same time keep traffic moving on ice-free streets. It's the BANOX* way!

Banox inhibits the corrosive effects of ANY slush—from pure water up to the most heavily saturated brines. It costs very little—even less than last year, thanks to the greatly increased production—and the saving to taxpayers and officials is measured not only in the pocketbook but on the nerves as well.

For full information, write to Calgon, Inc. Our representative will furnish samples of Banox and steel test strips for you to run your own simple, conclusive tests.

*Registered trade-mark of Calgon, Inc.

**BANOX IN BRIEF**

- Works in any type of slush.
- One pound treats 100 pounds of salt.
- Protection lasts through later thaws and rains.
- Odorless and harmless to skin, eyes, clothing, plants, trees.
- Can't harm paint, automobile finishes or tires.
- Protects both rusted and freshly exposed metal.
- Costs less than 2¢ per capita per year.

HAGAN HALL BUROMIN CALGON

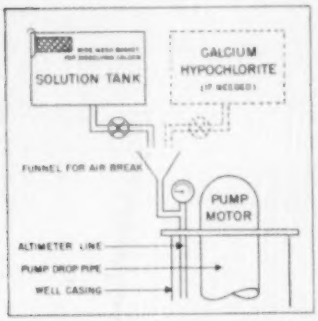
**calgon, inc.**

A SUBSIDIARY OF HAGAN CORPORATION

HAGAN BUILDING PITTSBURGH 30, PA.

## New Life for Old Water Wells

Well-cleaning with Calgon, a vitreous sodium phosphate, removes accumulations of clay and fine silt—which are not affected by acid cleaning—as well as deposits of iron oxide and calcium carbonate. Because this material is




**A schematic diagram of the arrangement needed for well-cleaning with Calgon solution.**

non-corrosive to either metal or concrete during the short contact periods required, a well that has lost capacity because of plugging or clogging can be cleaned without removal of equipment.

The required charge of Calgon, about 16 pounds per 100 gallons of water in the well, is added to the well casing in solution or solid form. Where bacteriological growths are suspected it is also advisible to add sufficient calcium hypochlorite to disinfect the well. Agitation is then obtained by rapidly starting and stopping the well pump so that the water just reaches the surface before falling back again. The well is thus surged about 12 times every four hours for 24 to 48 hours before thoroughly flushing the well to waste until the water clears up.

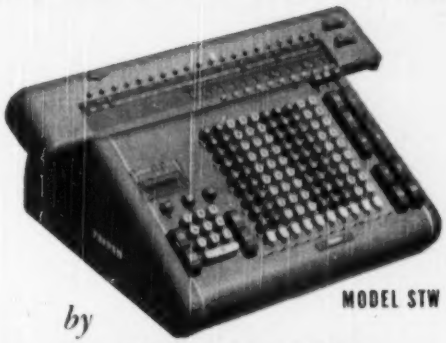
In cleaning wells with Calgon it is necessary to remove the well from service for a period of only one or two days. Developed by Calgon, Inc., Hogan Bldg., Pittsburgh, Pa., the results of using this method are a restoration of the original well capacity, increase in presure, and reduction of drawdowns.

## Atomic Power Plant Gets City-Sized Fire Alarm System

A completely self-contained, new-design fire alarm system, equivalent to those used in cities of 20,000 population, has been installed in the new Westinghouse atomic power plant in Pittsburgh, Pa., by The Gamewell Co., Newton Upper Falls 64, Mass. An alarm signal from any of the strategically located boxes throughout buildings and grounds will be automatically received and re-transmitted from the central control room. These fire alarm boxes are designed to send emergency signals despite broken wires and other abnormal conditions.


*A fully automatic*

**TAX CALCULATOR**



*by* MODEL STW

**FRIDEN**

**Produces Accurate Answers to Problems Like These... *in a hurry!***

**Tax in two installments...first installment includes personal property tax.**

| | |
|---|---|
| Total Assessment . . . . . | $4,500.00 |
| Personal Property . . . . . | 250.00 |
| Tax Rate $1.75 Per . . . . | 100.00 |
| Personal Property Tax . . . | 4.38 |
| 1st Installment . . . . . | 41.56 |
| 2nd Installment . . . . . | 37.19 |
| Total Tax . . . . . | 78.75 |

**Rates locked on keyboard for entire tax roll. Personal property tax, both installments and total tax obtained in one continuous operation.**

Telephone or write your local Friden office for a demonstration. Compare the performance of this amazing ultra-matic calculator on your own work in your own office.

So Easy to Learn — So Easy to Operate

So Fast, Without Practice

*Friden Mechanical and Instructional Service is available in approximately 250 Company Controlled Sales Agencies throughout the United States and Canada*

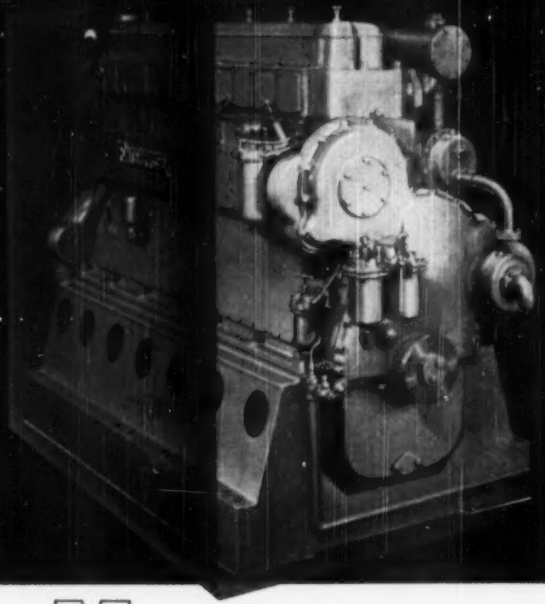
**FRIDEN**

**CALCULATING MACHINE CO., INC.**

HOME OFFICE AND PLANT · SAN LEANDRO, CALIFORNIA · SALES AND SERVICE THROUGHOUT THE WORLD

engineered to bring you the finest in medium speed

packaged diesel power



...the New ENTERPRISE M SERIES Stationary Diesels

**If you want 68 to 240 BHP, you'll get more for your money with an Enterprise 3, 4, or 6 cylinder M Series Diesel**

- 8" bore x 10" stroke
- Compact, light weight
- Easy starting, air or electric
- Operate on wide variety of low cost fuels
- Extremely low fuel consumption
- Smooth, quiet, clean operation
- Front and rear end power take-offs

Write for new Enterprise M Series Bulletin No. M-16, or call your nearest Enterprise office for complete information.

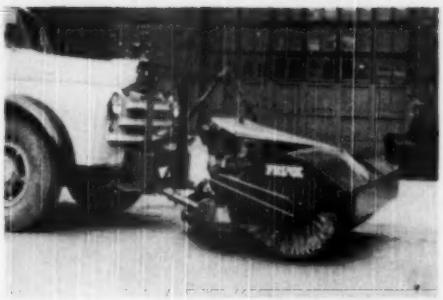
Everything you want in efficient stationary power is wrapped up in the all-new M Series packaged power plants. Designed and developed to meet the demand for tough and continuous operation at medium speeds, these completely self-contained diesels in 3, 4 and 6 cylinder models are now available for the most economical solution to your industrial power needs. Small, compact, light weight, portable if desired, these units deliver 68 to 240 BHP at conservative speeds of 450 to 750 RPM. They are WORK engines, capable of thousands of hours in demanding service, at low cost, with minimum maintenance and servicing requirements. When you compare, feature for feature, you're sure to make your next diesel a medium speed, high capacity Enterprise M engine—for years of the smoothest power you've ever enjoyed.

Enterprise STATIONARY Diesels

ENTERPRISE ENGINE & FOUNDRY COMPANY

18th & Florida Streets, San Francisco 10, California  Offices in Principal Cities

## Makes a Sweeper of Any Motor Truck



Frink Roto-Broom attached to the front of truck.

The Roto-Broom, made by Frink Sno-Plows, Inc., Clayton, 1000 Islands, New York ,attaches to the front end of any motor truck to remove dust, dirt, sand, gravel, cinders, leaves, and snow quickly and economically.

The unit attaches quickly to your truck by means of the regular attachment used with your snow plow. The brush is in the front so that the truck operator can direct it and an extra man is not required.

A 5.7-hp air-cooled Wisconsin gasoline engine provides an independent source of power. A constant brush speed of approximately 100 rpm is maintained regardless of the speed of the truck. Oil bath air cleaner and mechanical governor are standard equipment on the Roto-Broom.

For extremely dusty conditions, a water spray attachment is available as optional extra equipment. This consists of a spray bar and centrifugal pressure pump with V-belt drive and a suction hose with strainer to draw water from a barrel or other container placed in the truck body.

A flexible hook-up to the motor truck permits oscillation of the Roto-Broom to closely follow any unevenness in the street surface. Drive bars are adjustable for length and height to fit any size motor truck.

The brush assembly is reversible for sweeping either to the right or left, or it may be locked in the center position to sweep straight ahead.

An actual on-the-scene photo of a fireman's salvage crew using Shuredry Green-Bak Salvage Covers during a large department store fire in Raleigh, North Carolina.

Trained salvage crews save fire victims millions of dollars each year protecting furniture, merchandise and fixtures with Shuredry covers, from water and smoke loss.

Easy-to-handle, pliable Shuredry Green-Bak Salvage Covers are pressure impregnated with the exclusive Fulton dry treatment . . . top every test for water penetration and seepage. On your next order, specify Shuredry Green-Bak Salvage Covers.

*For information on prices see your fire equipment dealer.*

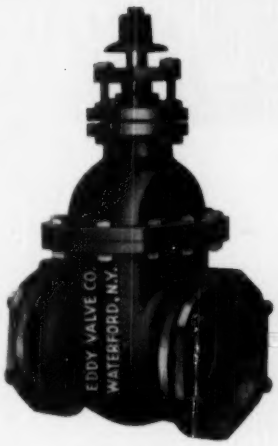
**Approved by National Board of Fire Underwriters and by Factory Mutual Laboratories.**

Fulton **BAG & COTTON MILLS**

Atlanta • St. Louis • Dallas • Denver • Kansas City (Kans.) • Minneapolis
New Orleans • Los Angeles • New York, 436 Broadway • Winter Haven, Fla.



# Save man hours



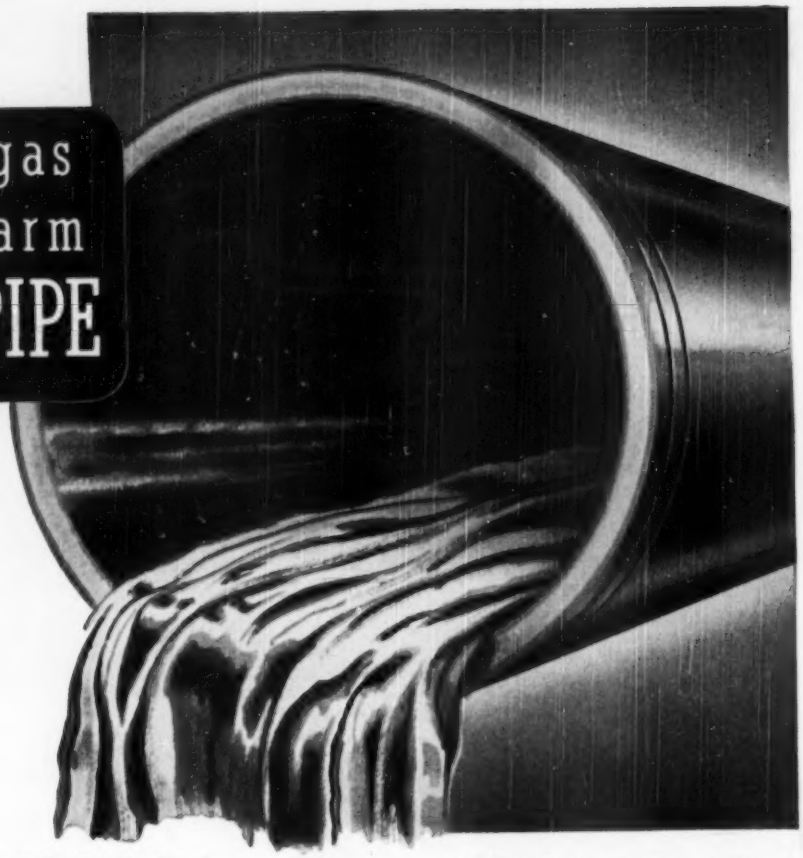

with the **EDDY** Mechanical Joint **VALVE**

After excavation, two unskilled workmen with a ratchet wrench can install these valves in a jiffy . . . and every joint will be *bottle-tight* under pressure. What's more, they can do the work in a flooded trench, or in any kind of weather, for no caulking, no lead-melting is needed. Eddy Mechanical Joint Valves meet AWWA specifications, and are available in sizes 3" to 12" for use on both centrifugally-cast and sand-cast iron water pipes.

**EDDY**
**VALVE COMPANY**
WATERFORD NEW YORK

*A subsidiary of James B. Clow & Sons*

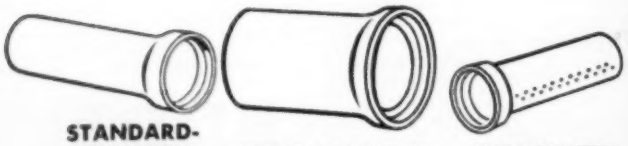
# sewer gas can't harm CLAY PIPE



The upper invert of Vitrified Clay Pipe is safe from the destructive, corroding acid fumes that rise from sewage. Maybe you've noticed how some sewers wear out *from the top down*. That's because the gases found in most sewer lines are often more harmful than the waste itself. But Vitrified Clay Pipe is completely safe from fumes and acids alike. It can't wear out, because it's chemically inert — top and bottom, inside and outside, through and through. Be *sure* by specifying Clay — the *only* pipe that never wears out.

NATIONAL CLAY PIPE MANUFACTURERS, INC.
703 Ninth and Hill Bldg., Los Angeles 15, Calif.
1105 Huntington Bank Bldg., Columbus 15, O.
100 N. LaSalle St., Rm. 2100, Chicago 2, Ill.
206 Connally Bldg., Atlanta 3, Ga.

SPECIFY *Vitrified* CLAY PIPE



STANDARD-STRENGTH CLAY PIPE

EXTRA-STRENGTH CLAY PIPE

PERFORMATED CLAY PIPE

C-150-2

## Pre-Pumped Air-Pressure Fuel Oil Can Is Safer

The Fillmaster portable fuel can delivers fuel by pre-pumped air pressure without lifting or funneling. It dispenses gasoline, fuel oil, or kerosene

without spillage and eliminates most of the danger in handling these flammable liquids.

The unit consists of a neoprene ½-inch hose, a safety valve to eliminate danger from excessive pressure, a pressure pump with a built-in locking handle for carrying ease, and a hand-operated squeeze nozzle that dispenses a gallon per minute. The container is rust-proof.

Made by the Fillmaster Co., Toledo, Ohio, the mechanism may be used for fueling such implements as lawn mowers, lamps and lanterns, road torches, and motors.

## Walker Process Appoints Eastern District Manager

John R. Sperry, vice president in charge of sales for Walker Process Equipment, Inc., Aurora, Ill., has been appointed eastern district manager with headquarters at 30 Church St., New York City.

J. R. Sperry

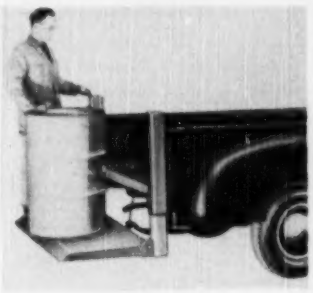
Mr. Sperry has been with the company since 1946. Before joining Walker Process Equipment he was with the American Well Works for ten years.

## Hydraulic Tailgate Loader for Pickup Trucks

The Lift-O-Matic, hydraulically powered, all-steel tailgate loader for pickup trucks, has been developed by the National Lift Co., Waukesha, Wis., subsidiary of Gar Good Industries, Inc., Wayne, Mich.

Designed to outlast the truck under normal conditions, the Lift-O-Matic is easily installed. Its lifting capacity is 1,000 pounds. Hydraulic power is provided by a fan-belt-driven hydraulic pump with its own self-contained clutch; pump operates only when lifting power is needed.

The driver-operator can raise, hold, or lower the Lift-O-Matic while riding up and down with the load, and the unit can be level-locked at truck body floor level or swung up and locked to act as tailgate.



For prices and additional information, write to National Lift Co., Dept. 2091, 225 Madison St., Waukesha, Wis.

## Detergent Used in Clean-Up of Philadelphia's Streets

**Ultrawet, the synthetic detergent manufactured by the Atlantic Refining Co., 260 South Broad St., Philadelphia 1, Pa., was used in a street-cleaning demonstration as the opening feature of the city's Clean-Up, Paint-Up, Fix-Up campaign. The mixture of Ultrawet and water creates a heavy foam for more effectively cleaning streets.**

## Rockwell Names Asst. V.P. Meter and Valve Division

L. A. Dixon, Jr., has been appointed assistant vice president of the meter and valve division of the Rockwell Mfg. Co., 400 N. Lexington Ave., Pittsburgh 8, Pa. He will assist in the coordination of sales and factory problems and make his headquarters at the company's home office in Pittsburgh.

L. A. Dixon, Jr.

General manager of the Rockwell Pittsburgh-DuBois division for the past two years, Mr. Dixon started in the engineering department of that division and was made executive vice president in 1944.

## Charles I. Day Dies

Charles I. Day, president of W. & L. E. Gurley, 510 Fulton St., Troy, N. Y., surveying and scientific instrument makers, died recently following a long illnes. Mr. Day had been associated with the company for 31 years.

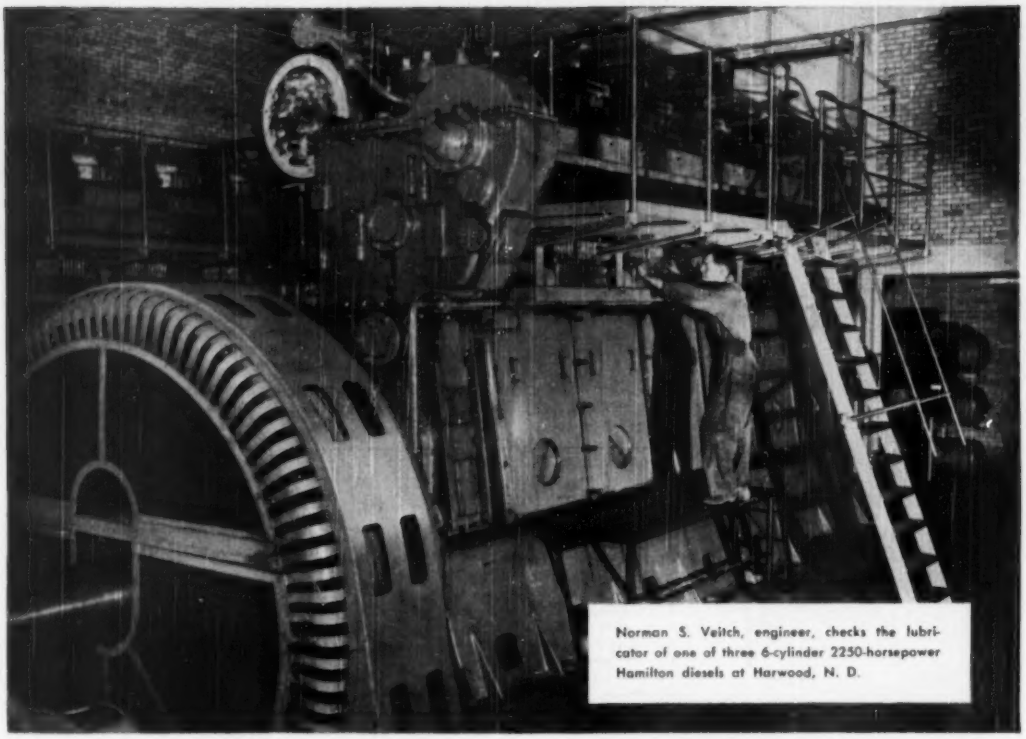
Starting as general manager and later promoted to president and director, Mr. Day's career began with the position of chief engineer for the Florida East Coast Hotel Co. Later he was vice president and manager of the Southern Utilities Corp.

## H. E. Hollberg Dies

Herbert E. Hollberg, vice-president of %Proportioneers, Inc.%, 345 Harris Ave., Providence, R. I., died recently.

A native of Sweden and a graduate electrical engineer of the University of Sweden, Mr. Hollberg began his career as a draftsman. He joined %Proportioneers% in Chicago, in 1933, shortly before the company moved to Providence as an associated subsidiary of Builders Iron Foundry. In 1934 he went to Sweden as the company's European representative. Four years later he returned as export manager, and in 1943 was made vice-president.

At the time of his death, he was in charge of the sanitary engineering division of the company, which manufactures chemical proportioning equipment.



Norman S. Veitch, engineer, checks the lubricator of one of three 6-cylinder 2250-horsepower Hamilton diesels at Harwood, N. D.

# HAMILTON DIESELS

## *" . . . about as perfect a machine as we could get"*

says the Chief Operator of this plant

This is the Harwood, North Dakota, plant of the Minnkota Power Cooperative. Since early 1947, three Hamilton diesels, each rated 2250 hp at 240 rpm, have been supplying 1,200,000 to 1,500,000 kwh per month to about 30,000 customers.

Mr. Helmer N. Eraker, Chief Operator since the plant began functioning, says "Considering everything, we have had a minimum of trouble. Under the job it is called upon to do, it is doing well—about as perfect a machine as we could get."

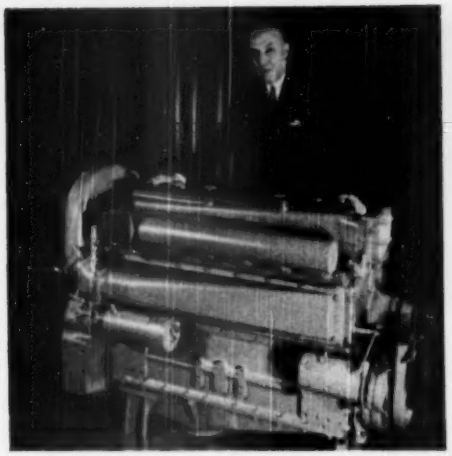
* * *

Hamilton diesels, with 21½ inch bore and 27½ inch stroke, are available with 5 to 12 cylinders. Ratings are 482½ bhp (net) per cylinder as a straight diesel and 455 bhp per cylinder as a dual fuel engine, both at 257 rpm. For full information, call the Lima-Hamilton Sales Offices in New York or Chicago, representatives in other cities, or write directly to Lima-Hamilton Corporation, Hamilton, Ohio.

LIMA HAMILTON CORPORATION

**HOOVEN, OWENS, RENTSCHLER CO.** **HAMILTON, OHIO**

*A division of the Lima-Hamilton Corporation*



## Light-Weight Diesel Engine Develops 275 Horsepower

W. T. Crowe, general manager of the Detroit Diesel Engine Div., with the new engine.

The Detroit Diesel Engine Div. of General Motors Corp., 13400 West Outer Dr., Detroit 28, Mich., has designed a light-weight diesel engine that provides the economy of diesel power in applications where such power could not previously be used because of size and weight. Designated the "110," the new engine gives 110-cubic-inch displacement per cylinder. It is a 6-cylinder, 2-cycle unit rated at 275 hp.

Designed to meet the higher power requirements of large earth-moving vehicles and general equipment, the engine has blower scavenging with gear-driven centrifugal blower furnishing considerably more air for the cylinders than is needed for combustion. Location of the blower at the rear of the engine above the flywheel contributes to compactness. The GM unit injectors—one for each cylinder—pump, meter, and atomize the fuel; they are easily removed for inspection or exchange.

Cylinder block and head are one-piece castings, both being symmetrical about a vertical plane between the No. 3 and 4 cylinders. This symmetry allows the cylinder head and block to be reversed, giving a choice of rotational directions and making possible a variety of accessory locations to suit installation requirements.

The 110 is offered as a bare engine, with full equipment for marine or industrial use, or with special accessory arrangements for a variety of end products. Optional accessories, which may be powered directly from the gear train, include a hydraulic steering pump, an air compressor, and a pump to circulate oil through the GM torque converter (which is installed as an integral unit at the factory for those applications where a fluid drive is needed.

## National Clay Pipe Elects New Officers

The National Clay Pipe Mfrs., Inc., 100 N. LaSalle St., Room 2100, Chicago 2, Ill., elected the following officers for the 1950-51 year:

W. E. Robinson, president of the Robinson Clay Product Co., Akron, Ohio, president; D. M. Strickland, management consultant of Cincinnati, Ohio, vice-president; John D. Cook, Chicago, Ill., secretary-treasurer. Mr. Cook has been associated with the clay pipe industry for more than 40 years.


ROADMASTER
Street Sweeper
WIRE

High Scleroscope Rating
Uniform temper.

Specially processed for high fatigue — against breakage. Long wearing. Conveniently cut and delivered in 100 and 200 lb. boxes. Prompt shipment from stock of all standard sizes.

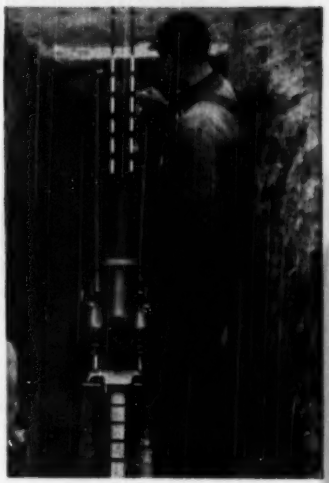
This gutter broom wire will prove an economy in your service.

"MORE MILES PER BRUSH"

JOHNSON
Steel & Wire Co., Inc.
Worcester 1, Massachusetts
New York Akron Chicago Detroit
Los Angeles Toronto



PUSH PIPE
UNDER STREETS, WALKS,
TRACKS, FLOORS



...with a GREENLEE PIPE PUSHER

Yes, here's the quick and simple way to install underground pipe. With a GREENLEE Hydraulic Pipe Pusher *one man* pushes pipe *under* obstacles. No tearing up of pavement, lawns, floors... eliminates extensive ditching as just a short trench accommodates the Pusher. No tedious tunneling, back-filling, tamping, or re-paving. Job time is cut to a fraction. Pusher often pays for itself through labor savings on the first job or two.

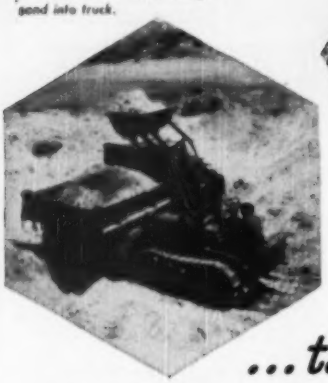
No. 790 GREENLEE PUSHER
For 3/4 to 4-inch pipe. Six Speeds—6,500 to 40,000 lbs. pushing pressure.

No. 795 GREENLEE PUSHER
For pipe larger than 4-inch, concrete sewer pipe, large drainage ducts. Six speeds—75,000 to 150,000 lbs. pushing pressure.

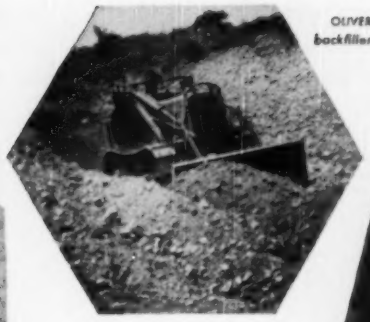
POWER PUMP for both sizes of GREENLEE Pushers. Pushes pipe at rate of two feet per minute.

GREENLEE

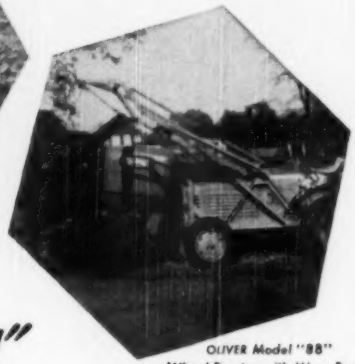
Get facts on timesaving Greenlee tools now. Write Greenlee Tool Co., Division of Greenlee Bros. & Co., 2028 Columbia Avenue, Rockford, Illinois, U. S. A.



OLIVER HG Crawler Tractor with Ware Loader loading sand into truck.



OLIVER HG Crawler Tractor with Ware backfiller blade attached to shovel arms.



OLIVER Model "88" Wheel Tractor with Ware Boom handling cast iron pipe.

# ...take the "Load" out of Your Loading Problems!

Whatever your loading problem, the easy, economical answer is an Oliver Crawler Tractor or Oliver Industrial Wheel Tractor and Ware Front-End Loader.

These powerful tractors and the hydraulically operated loaders are easy to operate . . . easy on maintenance and operating costs. Lift and bucket are hydraulically controlled. Hydraulic control of bucket assures greater breaking-out action and full loads . . . prevents wasteful spillage. "Midsection" pivot allows longer reach of dumping position and distributes the weight advantageously over the tractor frame to minimize strain. The hydraulic rams are designed to take most of the shock loads, assuring longer life for both tractor and loader.

And, the tractor-loader unit can be quickly converted to backfiller, boom or lifting fork. Special buckets are available for coal, snow or humus loading. The hydraulic system can be used to power other equipment such as mowers, sweepers, etc., in combination with the loader. For all the facts, see your local Oliver Industrial Distributor, or write direct to:

OLIVER Model "88" Wheel Tractor and Ware Loader loading out gravel.

OLIVER HG Crawler Tractor with Ware Loader on ditching job.

**THE OLIVER CORPORATION**

**Industrial Division: 19300 Euclid Avenue, Cleveland 17, Ohio**

*A complete line of Industrial Wheel and Crawler Tractors*

"THE SIGN OF EXTRA SERVICE"

## New Bitumuls Handbook Covers Paving Methods

A new pocket-size edition of the *Bitumuls Paving Handbook*, covering all aspects of Bitumuls Emulsified Asphalt paving techniques, bituminous binders, and including data on Laykold compounded asphalts for flooring, tennis courts, protective coatings, adhesives and waterproofing, has been published jointly by the Stancal Asphalt & Bitumuls Co., and by the American Bitumuls Co.

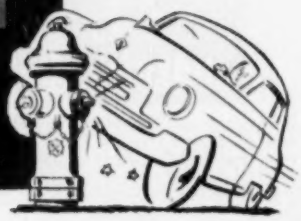
The book gives practical information on paving materials, methods, road and airport paving, Asphalt Institute cement and cutback specifications, tabular data on rates and quantities and lists free booklets covering individual types of construction. Free to technical men and public officials if requested on business letterhead from either company at 200 Bush St., San Francisco 4, Calif.

## Exhibitors for Water-Works Convention

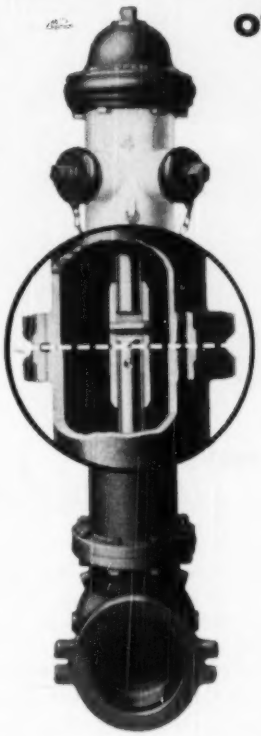
The following members of the Water and Sewage Works Manufacturers Associations, Inc., have reserved exhibit space at the forthcoming New England Water Works Association Convention to be held at the Poland Spring House, Poland Spring, Me., Sept. 17-20, 1950:

AMERICAN CITY MAGAZINE, THE; Builders-Providence, Inc.; Calgon, Inc.; Central Foundry Co., The; Centriline Corp.; Chicago Bridge & Iron Co.; Dean & Co., Payne; Dresser Mfg. Div., Dresser Industries, Inc.; Eddy Valve Co.; Ford Meter Box Co., The; Hersey Mfg. Co.; Homelite Corp.; Hydraulic Development Corp.; Johns-Manville; Leadite Co., The; Lock Joint Pipe Co.; Mueller Co.; Neptune Meter Co.; Pittsburgh-Des Moines Steel Co.; Pittsburgh Equitable Meter Div., Rockwell Mfg. Co.; Preload Corp., The; Prescott & Sons, H. R.; Public Works Magazine; Red Hed Mfg. Co.; Rensselaer Valve Co.; Smith Mfg. Co., The A. P.; Smith Co., S. Morgan; United States Pipe & Foundry Co.; Walker Process Equipment, Inc.; Wallace & Tiernan Co., Inc.; Warren Pipe Co. of Mass., Inc.; Water & Sewage Works; Water Works Engineering; Wood Co., R. D.; Worthington-Gamon Meter Co.


KENNEDY SAFETOP



**The Hydrant that Cuts the Cost of Traffic Accidents**



Wherever a fire hydrant faces the hazards of traffic . . . the community is safer, maintenance is lower, when it is a KENNEDY Safetop.

The whole secret is in the Safety Breakable Section (see enlarged inset on illustration). Notice the standpipe breaking ring. It has been so engineered that its strength is equal to that of the standpipe wall itself. This means that a KENNEDY Safetop Hydrant will stand up without breaking under any ordinary impact. But . . . the stresses are so distributed that when the breaking point is reached it breaks cleanly at the groove in the breaking ring.

The inexpensive stem coupling and breaking ring are the only parts to break . . . above ground where they are easily and quickly repaired. There's less damage to the car that hits it. Repair costs are a fraction of a below-ground break or of a fractured standpipe. The neighborhood does not risk curtailed fire protection for a protracted period.

ONE MAN in less than fifteen minutes, can permanently repair a KENNEDY Safetop Fire Hydrant broken in a traffic accident. A wrench, sledge hammer, screwdriver and a collision repair kit, consisting of a new Standpipe Breaking Ring, a new Stem Coupling, 2 pins and a gasket, are all he needs!

*Send for your copy of Bulletin No. 104 just off the press.*

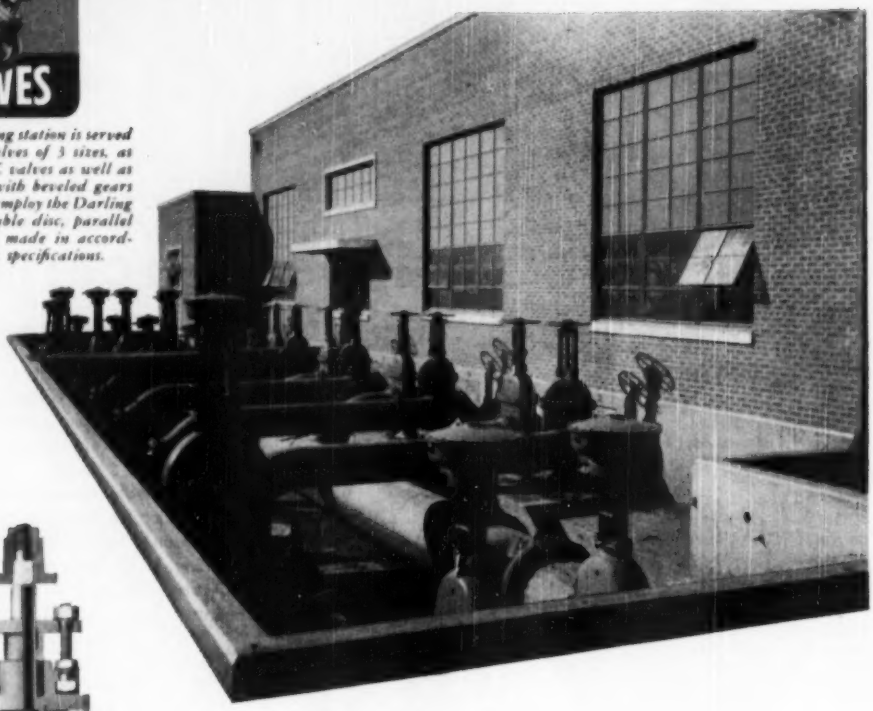
THE KENNEDY VALVE MFG. CO.
1030 EAST WATER ST.
ELMIRA, NEW YORK
VALVES · PIPE FITTINGS · FIRE HYDRANTS

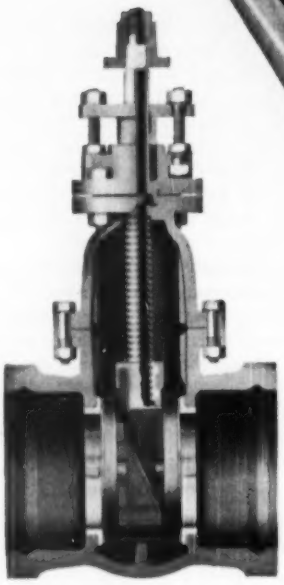
OFFICE-WAREHOUSES IN NEW YORK, CHICAGO, SAN FRANCISCO · SALES REPRESENTATIVES IN PRINCIPAL CITIES

DARLING VALVES

FOR PLUS VALUES, JOB-PROVED AGAIN AND AGAIN

*This modern pumping station is served by Darling gate valves of 3 sizes, as shown—20" O.S.&Y. valves as well as 30" and 36" sizes with beveled gears and gear cases.* All *employ the Darling fully revolving, double disc, parallel seat principle, and made in accordance with A.W.W.A. specifications.*





*Note rugged simplicity of this unique Darling principle—just four sturdy working parts . . . two plain interchangeable no-pocket discs and two husky wedges. Assembly and maintenance is extremely easy and foolproof.*

# Time and money ahead

THIS new municipal pumping station gains a unique advantage proved in hundreds of similar operations throughout the country. Because these gate valves are Darlings . . . *featuring Darling's fully revolving, double disc, parallel seat principle* . . . the city as well as the water department will be time and money ahead years on end.

If you haven't yet checked into Darling gate valves of this type (shown in cutaway view at left) we'd like to give you *all* the facts on the distinctive features that always add up to . . .

**1. Positive, easier closing. 2. Automatic adjustment for valve body distortion. 3. Elimination of disc-to-seat galling. 4. Uniform wear distribution. 5. Greater service life with far less maintenance.**

**SEND FOR BULLETIN**

Darling's latest bulletin is full of helpful information and describes Darling valves of *all* types for every normal or unusual service.

**DARLING VALVE & MANUFACTURING CO.**

**Williamsport 10, Pa.**

## Wood Company Host to Convention Delegates

The R. D. Wood Company, Philadelphia, Pa., entertained 38 delegates at the recent American Water Works Association Convention in Philadelphia. The group of delegates, which included superintendents and other water-works officials from many sections of the United States as well as two representatives from Hawaii, spent a day at the Florence Pipe Foundry and Machine Co., Florence, N. J., manufacturers of Mathews and R. D. Wood hydrants and R. D. Wood sandspun pipe and gate valves.

## Loads Own Shovel Without Moving Tractor

The Lessmann power shovel not only loads its own shovel without requiring the tractor to move, but digs on level ground, has a 42-inch forward sweep without moving the tractor, and can load the shovel at any angle desired and still get a 32-inch reach from the front of the tractor.

The machine can be equipped with a backfiller blade controlled by hydraulic cylinders for digging angle, planing angle, and entirely tipped for leveling angle or heeled back for distributing dirt evenly. No ramming is necessary to load.

With a turning radius of 22½ feet the 210 HF provides 4/5-yard bucket capacity and an extreme dumping clearance of 10 feet. Write the Lessmann Mfg. Co., 20th and Easton Blvd., Des Moines, Iowa.

## Drinking Fountains for Outdoors

The Ejecto-San outdoor drinking fountain made by The Murdock Mfg. & Supply Co., 426-430 Plum St., Cincinnati 2, Ohio, is designed so that there are no cross connections between potable water supply and any outside source which may possibly be contaminated. Surplus water remaining in the supply line after fountain operation is not drained to either ground or sewer.

The side-stream bubbler is well above the rim of the bowl to comply with various sanitary codes and the nozzle is protected against contact with the mouth of the user by an overhanging mouthguard.


*Your Town*

**can Have Beautiful WELL-LIGHTED STREETS with KERRIGAN STANDARDS Like These . . . .**

*City of Lawrenceburg, Installation showing new Kerrigan Standards beside antiquated lamp posts*

**. . . . With KERRIGAN Weldforged LIGHTING STANDARDS, designed and engineered to make night-driving in your town just like day . . . Standards that meet the highest engineering standards for highway and street lighting.**

**. . . . Notice what one progressive Tennessee town did to light its streets; then check the Kerrigan specifications below to see how much more Kerrigan Standards offer you.**

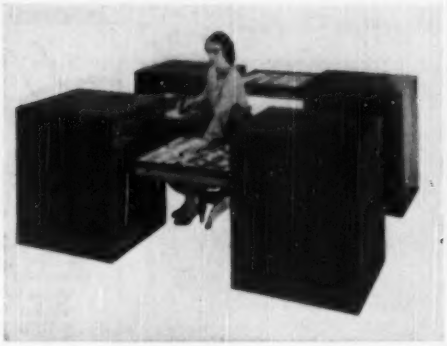
- ✓ Shafts (20', 25', & 30') and Mast Arms (4', 6', 8', 10', 12' & 15') to conform to I.E.S. recommendations.
- ✓ Continuous Tapered Octagon shafts from open hearth steel.
- ✓ Heavy steel construction for maximum strength.
- ✓ Detachable mast arms, brackets, and transformer bases for easy installation and maintenance.
- ✓ Ornamental scroll braces for beauty AND strength.
- ✓ Mechanical priming at factory with red oxide (inside and out) for longer life. Finish coat can be easily applied after standards are in place.
- ✓ Special designs to meet ANY and ALL special requirements. CONSULT THE KERRIGAN ENGINEERING DEPARTMENT.

**WRITE NOW**
(on your letterhead please)
for your
**FREE COPY**
of our Kerrigan Lighting Standard booklet AIA which gives you detailed specifications and catalog information.

*— Write —*

**KERRIGAN IRON WORKS, Inc.**
General Sales Office
274 MADISON AVENUE, N. Y. C.

## New Card Record Desk For Fast Reference



A new card record desk of large capacity is offered municipalities by the General Fireproofing Co., Youngstown, Ohio. Cards slant to the rear, fitting in trays which slope at the front and back to permit greater accessibility. The cards have a 2-inch-angle spread at the top and for tabulating cards, a 2-position front plate compressor is included.

The posting table moves back and forth to any desired position between two cabinets or it may be furnished with legs on one side and attached to a cabinet on the other side.

## Cook County Gets Two-Way Mobile Radio System

A $30,000 two-way G-E mobile FM radio system is being installed in the Sheriff's Department of Cook County, Ill. Manufactured by General Electric, Electronics Park, Syracuse, N. Y., the system will include 40 new G-E 10-watt type MC-203 mobile units. Nine transmitter-receiver units, in three base stations, will permit communication with more than 100 suburban communities, City of Chicago Police, Chicago Park District Police, and Illinois State Police.

The three stations, will be located at Morton Grove, Bedford Park, and Homewood. A 250-watt transmitter-receiver, with power to cover the entire county, will be used at Bedford Park for mobile communications, with a 50-watt unit for point-to-point communications, and a 50-watt standby unit.

The Morton Grove and Homewood stations will each use one 50-watt transmitter receiver on 159.09 mc for mobile communication, a duplicate standby unit, and a separate 50-watt unit on 155.37 mc for point-to-point communication with suburbs and other police agencies.

**Sheriff Michael Walsh signs $30,000 contract for Cook County's new General Electric two-way FM communications equipment. Looking on are H. N. McNeil, G-E's Chicago district representative (left), and M. L. Green, Cook County Highway chief.**


appreciation . . .

Our thanks to the municipal officials and to the leaders of the engineering profession for an overwhelming response to our booklet, "Taxes, Sewage Treatment and the BIO-CHEMICAL PROCESS." To those who haven't yet written for a copy—we'll be glad to fill your requests as long as the supply lasts . . .

. . . also, let us tell you how we can help you solve your individual sewage problems. It costs nothing to investigate thoroughly this proved method. Write to:

the Bio-Chemical Process

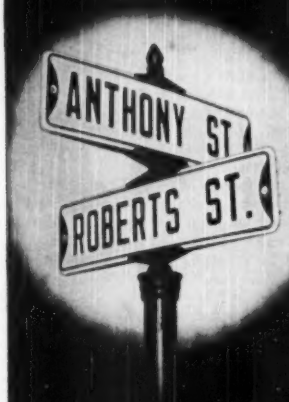
2266 North Meridian Street
Indianapolis 8, Indiana

120 Broadway
New York 5, New York



Beautiful. Legible. Low-Priced

STREET NAME SIGNS




WRITE FOR CATALOG

Cataphote Corporation

TOLEDO, OHIO

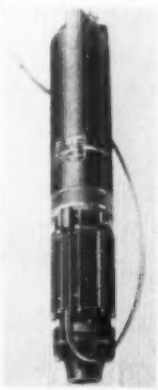
## Institute Adds Members, Appoints District Engineer

The Asphalt Institute, 801 Second Ave., New York 17, N. Y., a national, non-profit organization of the petroleum asphalt industry promoting the development and use of asphaltic products, recently increased its membership to forty companies to include The Empire Petroleum Co., Denver, Colo., Pan-Am Southern Corp., New Orleans, La., Southland Oils, Inc., Rogerslacy, Miss., and A. Johnson Co. of Sweden.

William H. Rhodes, former Louisiana Maintenance Engineer with 22 years' of experience in the highway building industry, has been appointed District Engineering Representative for the Institute, to cover Louisiana and Mississippi. He will assist William H. Mills, district engineer directing Institute activities in Alabama, Florida, Georgia, Louisiana, Mississippi, South Carolina and Tennessee.

Bernard E. Gray, president, announces that figures just released by the U. S. Bureau of Mines show a record total of 7,372,800 tons of petroleum asphalt and road oil used for paving in the United States during 1949, nearly 3% higher than the record 1948 figure. This paving tonnage represents 73.7% of the asphalt and road oil total figure for 1949 of 10,049,100 tons.

## Sumo Offers New Line Of Submersible Pumps



Sumo Pumps, Inc., 1 Atlantic St., Stamford, Conn., has established national sales operations for its line of electric submersible pumps designed for water supply systems and ranging in size from .7 to 60 hp with capacities of 2 to 1,250 gpm.

The pump and motor are assembled in a unit to operate in the well completely submerged in water. Installation is effected by lowering the pump on its riser pipe to the proper depth and connecting a submarine power cable to a convenient source of electric power supply.

**Cost-Conscious Owners buy MICHIGAN ½ yd. Crawler Cranes!**

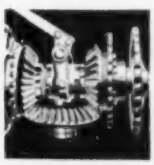
There's no other half-yard crawler crane excavator as good . . . dollar for dollar . . . as the MICHIGAN! Why? Because only MICHIGAN gives you these job-proved, "big-machine" features:

Independent travel to save minutes on every move, hours on every job. Tractor-ease steering to enable faster, easier maneuvering. Automatic, self-locking crawler brakes to give complete safety when working on grades. Smooth fingertip air control to eliminate operator fatigue and that "afternoon let-down."

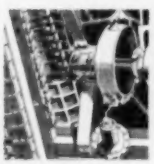
But, that's not all. There's the oversize internal-tooth circle gear . . . the hook rollers and independent drum assemblies . . . and there are many more. Compare MICHIGAN with any other half-yard crawler crane . . . then you, too, will agree it's your best buy! Take the first step in getting more for your money . . . write, wire or 'phone for complete details.

**MICHIGAN POWER SHOVEL COMPANY**

**373 Second Street, Benton Harbor, Michigan, U. S. A.**



**INDEPENDENT TRAVEL** — Standard equipment. Crawler mechanism powered through intermediate shaft's forward and reverse gears — not through swing gears.



**AUTOMATIC-LOCKING BRAKES** — Hold crawlers against downhill movement when working on grades, a feature operators appreciate. Brakes lock instantly, are released by air rams.

**TRACTOR-EASE STEERING** — Operator can maneuver a Michigan accurately and fast because it steers like a tractor — steering brakes are used instead of conventional jaw-clutches.

**FINGERTIP AIR CONTROL** — Air pressure to a clutch ram is regulated instantly as operator desires, thus giving him complete control and "feel of the load" at all times.

# Investigate your accounting methods

# Compare

## and we'll save you money

Compare two ways.

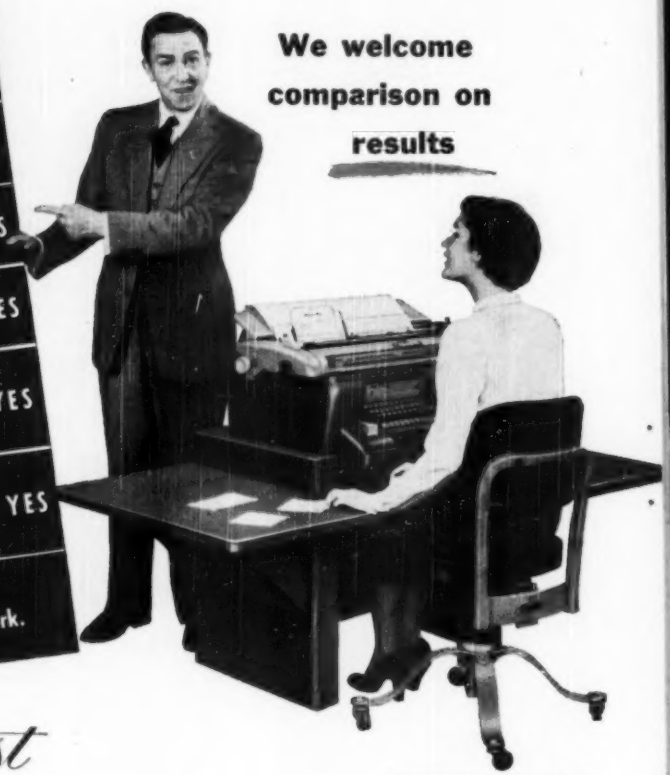
First, compare the *results* you now get from present methods—machine or manual—with the results you can get from *Foremost*. This all-new, all-purpose accounting machine has simplified the whole problem of producing the records you need...speedily.

Second, compare *Foremost* with any other descriptive accounting machine made. Compare the automatic features shown in the chart...features that assure greater output hour by hour and day by day on *any* accounting job.

Compare—you've nothing to lose and *money* to gain! Drop in at your nearest Remington Rand office for a demonstration—or write to Management Controls Reference Library, Room 1940A, 315 Fourth Avenue, New York 10.

| COMPARE FOREMOST'S FEATURES | FOREMOST |
|---|---|
| Touch-method operation from the simplest type alphabetical-numerical keyboard—saves reaching for any key. | YES |
| Electrified keyboard for instantaneous printing and accumulation—requires fewer operator movements. | YES |
| Automatic new balance printing with direct subtraction in all registers—gives operating flexibility and accuracy. | YES |
| Automatic tabulation from one column to the next without motor bar operation—speeds posting. | YES |
| Automatic column selection by new "Selector Key" feature—increases accuracy and speed of distribution. | YES |
| Visibility of posting line and all totals—provides for easy insertion of forms, entry of previous balance and reference. | YES |
| Flexibility of registers and controls—permits form changes as required and use of machine for two or more applications. | YES |
| Your operator gets more work done because FOREMOST does more of the work. | |

**We welcome comparison on results**



See *Foremost*

The **Remington Rand** Accounting Machine

Copyright 1950 by Remington Rand Inc.

J. W. Stovall W. A. Meiter

## New Worthington Appointments

William A. Meiter, formerly office manager, has been appointed Central sales manager for the Buffalo, Detroit, Cleveland, Cincinnati and Pittsburgh offices of the Worthington Pump and Machinery Corp., Harrison, N. J.

John W. Stovall, Rochester office, sales engineer, will succeed Mr. Meiter as manager of the Buffalo District Sales Office.

## Stauffer Moves Plant

The Stauffer Mfg. Co. has moved its plant from South Gate, Calif., to 2453 Merced Ave., P. O. Box 211, El Monte, Calif.

## Bucyrus-Erie's Distributor

The Bucyrus-Erie Co., South Milwaukee, Wis., has appointed the Contractors Machinery Co., San Antonio, Texas, as distributor in south-central Texas for its excavators, which come in ⅜- to 4-yard capacities, in gasoline, diesel, and single-motor electric models.

## Representing American Well Works

The American Well Works, Aurora, Ill., engineers and manufacturers of pumping and sewage equipment, has appointed the Mills Engr. Co., Inc., 10 High St., Boston 10, Mass., as representatives for Maine, New Hampshire, Vermont, Massachusetts, and Rhode Island.

## Roddick Announces New Pipe Wrenches

Roddick Internal Pipe Wrenches (illustrated), manufactured by the Roddick Tool Co., 112 Rochester St., Costa Mesa, Calif., are now available in all standard pipe sizes from ⅛ to 4 inches. Made of heat-treated alloy steel, with only one single moving part, these wrenches are unconditionally guaranteed; available for standard, extra-heavy, and double extra-heavy pipe.

They are recommended also for use where electrical conduit or any type of tubing is being used, for the installation or extraction of fittings in close quarters, or for the extraction of worn or broken fittings.

**This is the picture Roddick Tool Company gave us to illustrate its pipe wrenches. We do not believe the young lady is a water or sewage works operator, but she does show the equipment off nicely.**

SCIENTIFICALLY DESIGNED
**STEEL FOLDING CHAIRS**
for COMFORTABLE and SAFE seating for MEETINGS—AUDITORIUMS—INSTITUTIONS
**100% COMPACT**
Fold down to 2" thin
EASY TO SET UP—EASY TO FOLD
Buy Clarin chairs with confidence—the result of 28 years of folding chair experience.
**write CLARIN MFG. CO.**
4640 W. Harrison St., CHICAGO 44, ILL.
Write for folder Dept. Y-8
There are more Clarin steel folding chairs in institutional service than any other make

Detectron 505
**PIPE DETECTORS**

**FIRST** With a Metal Case
**FIRST** With Shielded Loops
**FIRST** With "Sure Grip" Handle
**FIRST** With Lifetime Guarantee

The new DETECTRON Model 505 locates, traces and centers pipes and cables with speed and accuracy. Small, compact, lightweight — with HEAVY DUTY PERFORMANCE.

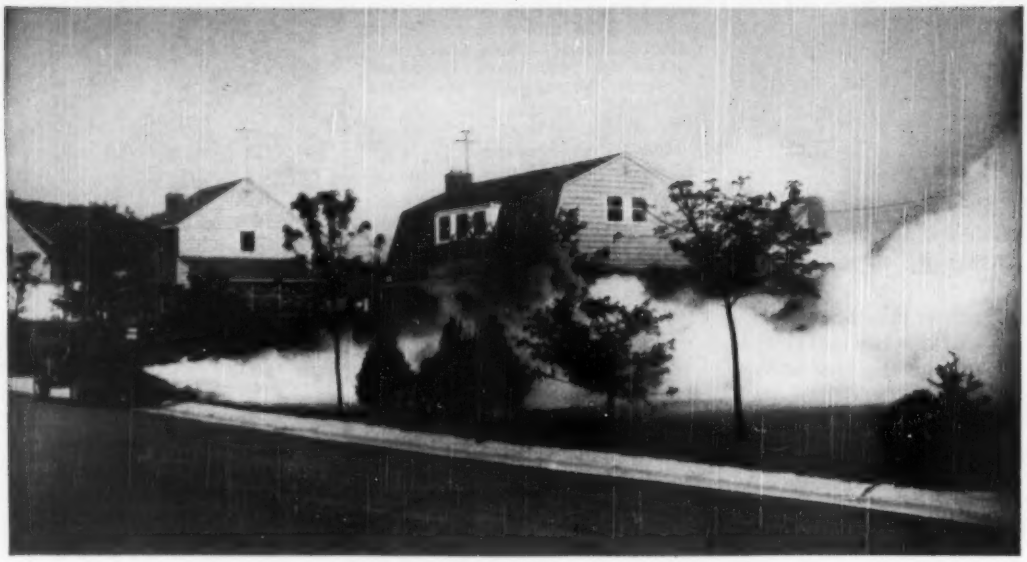
★ HIGHER QUALITY
★ LONGER LIFE
★ LOWER PRICE

**TRIPLE VALUE!**
For Complete Information Write for Folder 8-R

THE Detectron CO.
5437 CAHUENGA BLVD. NORTH HOLLYWOOD, CALIF.

**American Vacuum Leaf Loader**
**Solves your leaf or clean-up problem**

*Write for leaflet*
**LEAF LOADER DIVISION**
American Structural Steel and Tank Co.
21050 W. 8 MILE ROAD DETROIT 19, MICH.



*will never be any*

# THERE ~~IS NO~~ SUBSTITUTE FOR EXPERIENCE

*And in fogging,*

## TIFA THE PROVEN APPLICATOR

*Carrying Underwriters' Listing Seal*

## HAS YEARS OF EXPERIENCE!

Five successful years of dispensing death-dealing fog have *proven* TIFA more effective, faster, more economical than any other fogging method.

This outstanding record means you can *solve* your fly, mosquito and health problems *more easily* and *inexpensively* with TIFA. For TIFA is self-powered, sturdy, one-man-operated . . . discharges insecticides in a true, clean fog which spreads quickly, clinging to all objects and permeating tiniest crevices.

TIFA is essential to your community's health and well-being. Use TIFA on garbage and fill dumps . . . in thickly-populated areas . . . over swamps . . . and wherever folks congregate and insects annoy them.

You can depend on this amazing fogging machine. Put TIFA to work for you!

**TIFA** TODD INSECTICIDAL FOG APPLICATOR

*Write for illustrated folder —full details, official comments on sensational TIFA*

*A Product of*

**COMBUSTION EQUIPMENT DIVISION**

## TODD SHIPYARDS CORPORATION

81-16 45th Ave., Elmhurst, Queens, N. Y.

## Fire Truck for the Smaller Airport

The Cardox airport fire truck, Model MC-750, is designed specifically for the smaller field to fulfill such duties as extinguishing small spill fires, fueling, motor start-ups.

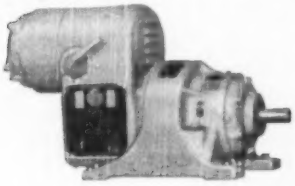
Made by the Cardox Corp., 307 N. Michigan Ave., Chicago 1, Ill., the truck's primary extinguishing medium is low-pressure carbon dioxide, which is maintained in a single insulated refrigerated storage vessel. In remote areas where liquid carbon dioxide is not available for recharging this unit, it may be recharged from high pressure cylinders through manifold and regulator provided for this use.

The cooling effect of carbon dioxide is greatly increased due to the characteristic of the Cardox discharge of $CO_2$ "snow"—finely divided particles of dry ice at a temperature of 110° below zero. Effective projection even in the presence of strong winds is accomplished by means of Cardox "snow separation" nozzles which achieve virtually complete separation of $CO_2$ snow and vapor, enabling the separated $CO_2$ snow to be concentrated in one portion of the discharge.

The foam capacity of this unit will provide for limited blanketing possibilities as well as provide foam protection where needed as a single agent. The water capacity of the unit can be used with or without foam. The unit has a 3-inch suction line and two 1½-inch discharge lines so that the unit can be used as a pumper.

## New Combination Geared Variable Speed Motor

For users of fractional horsepower motors, U. S. Electrical Motors, Inc., 200 E. Slauson Ave., Los Angeles 54, Calif., has developed the Type VA-GD motor, available in ¼, ⅓, ½ and ¾ hp. It combines in one unit a Varidive which permits instant change of speed



in a ratio of 1 to 10 and a heavy duty Syncrogear for increasing the torque.

The motor was designed for those fields of operation where a light weight industrial motor is needed. The frame of the Varidrive is cast aluminum. A new type of dial control permits instant speed change by turning the handle less than one revolution to obtain any speed change. Slippage is prevented by incorporation of the improved Autotaut belt tensioner which automatically compensates for various loads. Quick inspection of the interior is made by slightly loosening four screws and removing the cover plate.

## Graybar Appoints Henges As Assistant to President

W. E. Henges, Cleveland district manager for the Graybar Electric Co., Inc., 420 Lexington Ave., New York 17, N. Y., has been advanced to the position of assistant to the president as of Sept. 1. C. E. Kirkpatrick will take over Mr. Henges' previous position.


**BRAXMAR BADGES**

**Standard Badges Since 1879**

Write for circular illustrating badges for Police, Fire and other City, County and State Officials

John O. Veit, Pres.

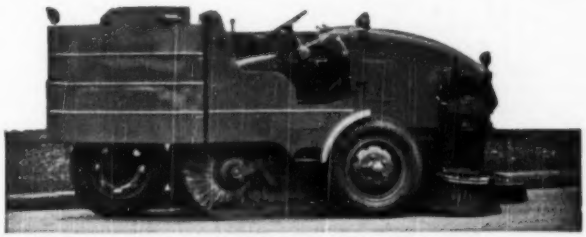
**C. G. Braxmar Co., Inc.**
216 E. 45th St., New York 17, N. Y.

**South Bend**

**GUTTER-SNIPE**

*Model "E" Pick-Up Street Sweeper*

- 2-cubic yard hopper
- 3 sweeping speeds
- Sweeps 6 feet wide
- Turns in 19′ circle
- Goes up a 10% grade



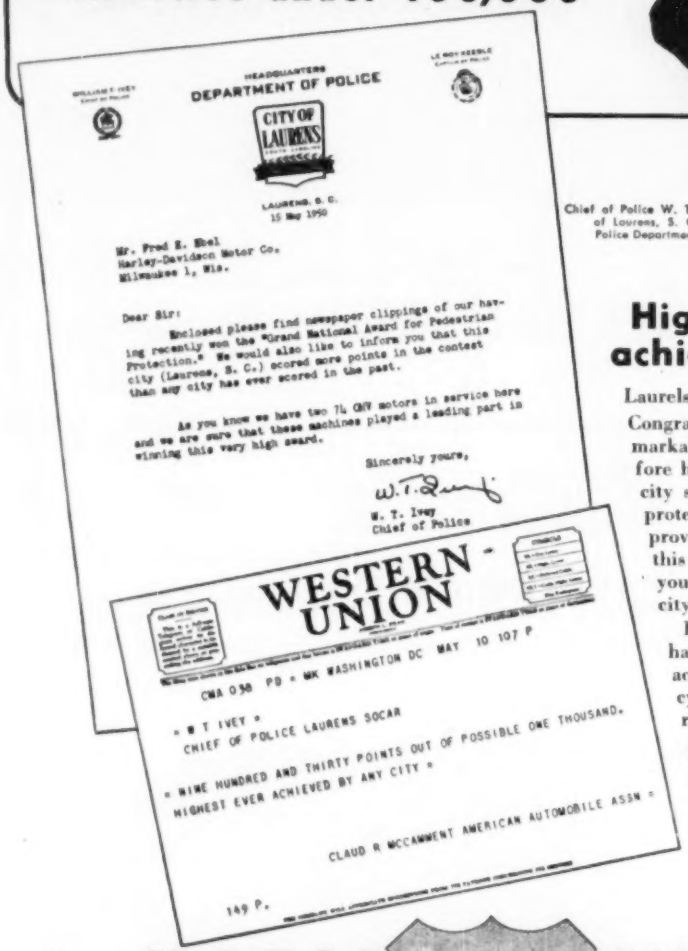
*We also manufacture SOUTH BEND "Big 6" Street Flushers, Bituminous Distributors, Bituminous Maintenance Units, and Gravity and Pressure Sprinklers.*

**Municipal Supply Company,** South Bend 23, Indiana, U. S. A.
Export Department — 44 Whitehall Street, New York 4, N. Y.

# LAURENS, S. C., WINS GRAND NATIONAL AWARD

## *for pedestrian safety in cities under 100,000*

Chief of Police W. T. Ivey, of Laurens, S. C., Police Department.



HEADQUARTERS
DEPARTMENT OF POLICE

CITY OF LAURENS

LAURENS, S. C.
15 May 1950

Mr. Fred E. Ebel
Harley-Davidson Motor Co.
Milwaukee 1, Wis.

Dear Sir:

Enclosed please find newspaper clippings of our having recently won the "Grand National Award for Pedestrian Protection." We would also like to inform you that this city (Laurens, S. C.) scored more points in the contest than any city has ever scored in the past.

As you know we have two 74 CVV motors in service here and we are sure that these machines played a leading part in winning this very high award.

Sincerely yours,

W. T. Ivey
Chief of Police



WESTERN UNION

CWA 038 PD = WK WASHINGTON DC MAY 10 107 P

= W T IVEY =
CHIEF OF POLICE LAURENS SOCAR

= NINE HUNDRED AND THIRTY POINTS OUT OF POSSIBLE ONE THOUSAND.
HIGHEST EVER ACHIEVED BY ANY CITY =

CLAUD R WICKARD AMERICAN AUTOMOBILE ASSN =

149 P.

## Highest record ever achieved by any city!

Laurels to Laurens, the "Safest City!"

Congratulations, Chief Ivey, and your remarkably efficient department! Never before has any police organization in any city set so high a record in pedestrian protection and traffic control! And to prove that winning the highest award in this contest was "no accident", this was your second straight victory in your city's classification!

Harley-Davidson is proud to have had a part in your history-making achievement by providing the motorcycles used to help set this amazing record of police efficiency.

**HARLEY-DAVIDSON MOTOR COMPANY**
**Milwaukee 1, Wisconsin**

**HARLEY-DAVIDSON**

*MOTORCYCLES* POLICE BETTER TRAFFIC CONTROL *SERVI-CARS*

## Farm Tractor Cuts Grass

A rear engine mounted farm tractor with an industrial mower, manufactured by the Allis-Chalmers Tractor Div., Milwaukee, Wis., has proved to be an economical grass cutter for the Raymondville Country Club, Raymondville, Tex.

By concentrating 79.2% of its 1,285-pound weight on the drive wheels, instead of the usual 61 to 63%, this A-C Model G tractor delivers maximum power to the drawbar, thus converting more engine power to productive work at less cost. It uses the sickle bar in the rough and three gang mowers on the fairway.

## Model Parking Encouraged by Twin Meters

By W. H. Johnson
*General Sales Manager*
*International Meters, Inc.*

With approximately 2,500 American cities now using parking meters, and this total consistently increasing from day to day as additional communities adopt them, it is reasonable to state that parking meters are here to stay.

Further evidence of this permanence is the noticeable expansion of metered zones by cities where meters have been in use for some time, proving that they are performing a needed and valuable aid to communities they service.

Modern traffic problems necessitate new and modern methods of traffic control. With the advent of the new Alfco Twin Automatic Parking meter in the fall of 1947, the advantages of pair-parking became evident. With the Twin meter, cars are parked in pairs, bumper-to-bumper, allowing a generous area of space for either car to enter or exit from the parking zone. The advantages are a much better vision of traffic lanes, traffic moves faster and more safely, fewer traffic jams result, and there is less locking of bumpers and jamming of fenders. Yet all the street parking spaces are used.

The Alfco Twin meter, is made by the American-LaFrance-Foamite Corp. of Elmira, New York, manufacturers of fire-fighting equipment, and is sold through its subsidiary, International Meters, Inc., 100 E. LaFrance St., Elmira, New York.

PREMAX *House Numbers*

*Meet All Municipal Requirements*

Premax Stamped and Embossed Aluminum House Numbers have been adopted as standard by countless municipalities because of their clearness and legibility under all conditions.

Available in various sizes in attractive styles which harmonize with any type of architecture.

Send for special bulletin illustrating various methods of numbering.

**PREMAX PRODUCTS**
DIVISION CHISHOLM-RYDER CO., INC.
5046 Highland Ave., Niagara Falls, N.Y.

-EVER HOPE FOR A FENCE THAT NEVER NEEDS PAINTING?

Copperweld NON-RUSTING CHAIN LINK FENCE

Copperweld* Chain Link Fence is the protective fence that protects itself. It *never* needs a drop of paint—no maintenance costs to worry about. There's no other fence like it. It is made of Copperweld Wire—with a thick, durable copper covering inseparably "Molten-Welded" to a strong steel core.

Because of its unique construction, Copperweld Fence is rust-proof, corrosion-proof. It provides long lasting property protection regardless of atmospheric conditions. It stays strong and in alignment. It costs less because it lasts longer.

Write today for a sample of Copperweld Fence and a copy of our new catalog—free on request.

*Trade Mark

**COPPERWELD STEEL COMPANY**
1015 Monongahela Ave., Glassport, Pa.

This Cut-away Section of Copperweld Wire shows why COPPERWELD FENCE Never needs painting

Copper Covering For Permanence
Steel Core For Strength
THE EXCLUSIVE COPPERWELD "MOLTEN WELD" MAKES THE 2 METALS INSEPARABLE

# Here today – *and still here tomorrow*

## THAT'S THE STORY OF SANTA FE'S CONCRETE STREETS

Don Gaspar Ave., paved in 1912.
Photos taken in 1925 and 1949.

Santa Fe, N. M., paved its first street with concrete in 1912. Today the majority of the city's paved streets are concrete.

Santa Fe motorists and taxpayers have reason to be proud of these streets, examples of which are shown on this page, for they have given long, faithful, ***low-annual-cost*** service and are still carrying traffic of ever-increasing weights and volume.

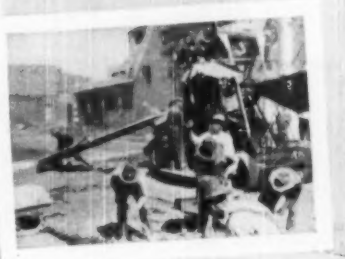
In recent years, the load has been particularly heavy because shipments to the Atomic Energy Commission town of Los Alamos move from the railhead at Santa Fe over the city's streets.

Dave Thornburg, City Engineer, states: "Since the streets were paved the maintenance cost has averaged less than $65 per mile per year."

The outstanding durability and ***low annual cost*** of these Santa Fe streets are typical of concrete pavements all over America. Concrete pavements are also safer—day or night, wet or dry—because concrete's gritty surface is uniformly skid-resistant and its light color provides greatest visibility at night.

Concrete pavements usually cost less to build than other pavements of equal load carrying capacity. They require much less maintenance and give longer service. Thus they render real ***low-annual-cost*** service—the true measure of pavement cost.

For more information write today for a free copy of *"Concrete Pavement Design."* Distributed only in the United States and Canada.

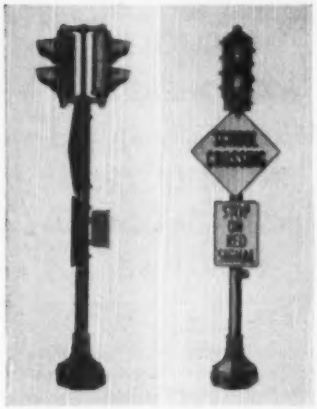


Shelby St., paved in 1921.
Photos taken in 1921 and 1949.

**PORTLAND CEMENT ASSOCIATION**
**Dept. 8-4, 33 W. Grand Ave., Chicago 10, Illinois**
A national organization to improve and extend the uses of portland cement and concrete... through scientific research and engineering field work

South Federal Place, paved in 1934. Photos taken in 1934 and 1949.

## New Push-Button School Signal System




A new adaptation of standard traffic signal components equipped with a push button to be operated by the School Patrol is offered by Eagle Signal Corp., Moline, Ill. A time clock permits operation to take place in the morning, at noon and in the afternoon when the children are abroad. At other periods, and on Saturday, Sunday, and holidays, sequence reverts to selected vehicle minimum period listed in chart below and is not subject to response from push button.

The Eagle School Signal system consists of two 2-way 2-section signal heads with red and amber lens, a control box containing controller, flasher and time clock, and a push button, all mounted on two 8-foot posts. Six signs are also furnished with the standard package unit which includes two advance warning signs.

The Controller provides memory feature so that if the push button is actuated at any time during the vehicle minimum period, the controller will go through the desired cycle of operation when preset time is reached, without further actuation. The possible sequences available from Eagle Signal Corp. for the control of your school intersections are listed in the chart above.

| SEQUENCE NO. | VEHICLE MINIMUM PERIOD | WARNING PERIOD | PROTECTION PERIOD |
|---|---|---|---|
| 1 | Dark | Steady Amber | Flashing Red |
| 2 | Dark | Steady Amber | Steady Red |
| 3 | Dark | Flashing Amber | Flashing Red |
| 4 | Dark | Flashing Amber | Steady Red |
| 5 | Flashing Amber | Steady Amber | Steady Red |
| 6 | Flashing Amber | Flashing Red | Flashing Red |
| 7 | Flashing Amber | Steady Red | Steady Red |
| 8 | Flashing Amber | Steady Amber | Flashing Red |
| 9 | Sequence No. 1 with 5-sec. bell terminating with Flashing Red. | | |

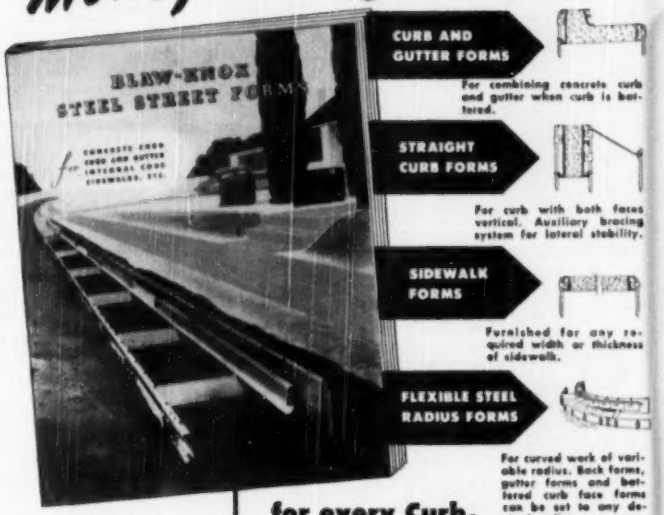
## New B. I. F. Subsidiary

The Builders Iron Foundry, Providence, R. I., has formed a subsidiary named BIF Industries of Canada, Ltd., 454 King St., West, Toronto 2B, Ontario, Canada, for the manufacture of venturi meters, flow controllers and gauges, Chlorinizer and chlorine gas feeders, and Omega gravimetric and volumetric chemical feeders.

Sales of all of these products in Canada will continue to be handled by Keith Mercer, Reg'd., 1100 Craig St. East, Montreal 24, Quebec; Control and Metering, Ltd., 454 King St., West, Toronto 2B, Ontario; and Bayfield and Archibald, 448 Seymour St., Vancouver, B. C.

Officers of the new company include E. H. Bradley, president; G. W. Kelsey, vice-president; E. D. Wilkes, vice-president and general manager; and H. S. Chafee, treasurer.


**28 PAGES OF *Money Saving Ideas!***


BLAW-KNOX
STEEL STREET FORMS
CURB AND GUTTER FORMS
For combining concrete curb and gutter when curb is battered.
STRAIGHT CURB FORMS
For curb with both faces vertical. Auxiliary bracing system for lateral stability.
SIDEWALK FORMS
Furnished for any required width or thickness of sidewalk.
FLEXIBLE STEEL RADIUS FORMS
For curved work of variable radius. Back forms, gutter forms and battered curb face forms can be set to any desired radius.

*Send for* **BULLETIN 2259** *today*

28 pages of detailed illustrations show form set-ups for every type of work with complete instructions on how to use them. You'll find *your* job illustrated, making it simple to select the forms you need. Start your set of Blaw-Knox Steel Forms now—expand it any time to meet future needs. Write for your copy of Bulletin 2259 today!

**for every Curb, Gutter and Sidewalk Job!**

Get this big money-saving bulletin now—see how easy it is to save money and speed completion of every job with Blaw-Knox Steel Curb and Gutter Forms. There's no need to use expensive lumber and carpentry labor when Blaw-Knox Steel Forms do the job BETTER (without costly hand finishing)—FASTER (they're so easy to set and strip)—and CHEAPER (you can use them over and over, in combinations to meet every job requirement, fit every shape).

**BLAW-KNOX DIVISION of Blaw-Knox Company**

2009 Farmers Bank Bldg., Pittsburgh 22, Pa.

Birmingham • Chicago • New York • Philadelphia • Washington

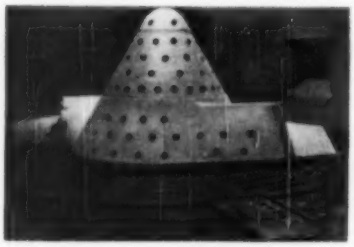
**BLAW-KNOX**

# More and More Monohearths

| | |
|---|---|
| Arlington County, Virginia | Windsor, Ont., Canada |
| Collingswood, N. J. | Philadelphia, Penna. |
| Ft. William, Ont., Canada. | Providence, R. I. |
| Salisbury, Maryland | Middletown, Conn. |
| Moncton, New Brunswick, Can. | Waterbury, Conn. |
| Yonkers, New York | Port Chester, N. Y. |

York & N. York Townships, Canada

**NICHOLS MONOHEARTH Mechanically Stoked INCINERATOR INSTALLATIONS 1949-1950**



MONOHEARTH CONE AND ARMS PROVIDE DEPENDABLE, EFFICIENT STOKING.

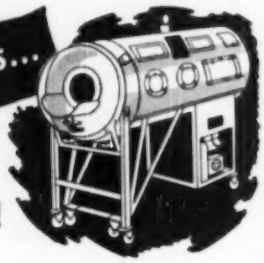
The record shows more and more municipalities are installing Monohearth Mechanically Stoked Incinerators for refuse disposal. Dependability, low costs and superior service supply the reason.

*Write for Bulletin No. 2178*

**NICHOLS ENGINEERING & RESEARCH CORP.**
70 PINE STREET · NEW YORK 5, N. Y.

*Pacific Coast office:* 40 S. LOS ROBLES AVE. PASADENA, CALIF.
*In Canada:* 1477 SHERBROOKE STREET, WEST, MONTREAL 25

# utterly useless...



## paralyzed by power failure!

It is easy to see why hospital authorities are not likely to worry about electrical power supply. It almost never fails. But when it does, results easily may be catastrophic! It's safer *to be sure*—by having a Fairbanks-Morse emergency generating set ready to take over!

Because standby power service costs so little, means so much even for small hospitals, no hospital should be without a Fairbanks-Morse generator! They're in use now in hundreds of hospitals. Let your Fairbanks-Morse dealer give you full information about a generator for your hospital. Or, mail the coupon for full facts today.

**FAIRBANKS-MORSE,**
*a name worth remembering*

Fairbanks, Morse & Co.
600 S. Michigan Ave.
Chicago 5, Ill.
Send us illustrated literature describing your emergency generating sets for hospitals.
Name .....
Address .....
City ..... State .....

# WORTHINGTON-GAMON

## LIQUID METERS

All Sizes All Types

**Worthington-Gamon Meter Co.**
*Subsidiary*
WORTHINGTON PUMP & MACHINERY CORP.
296 South Street Newark 5, New Jersey

## Sample Street Sign . . . Free!

Aluminum street signs, manufactured by Lake Shore Markers, Div. of the Lake Shore Pattern Works, 654 West 19th St., Erie, Pa., are designed for permanent, economical street marking. A new, quick installation method uses no bolts; stainless steel ¾-inch bands offer permanent stability. Both the 14-gauge galvanized steel frame and the aluminum sign are engineered to serve against normal hazards for years. Write for full details and include street names for sample marker.

## Two-Car Parking Meter

The Twin-o-Matic Meter, a new automatic parking meter, has been introduced by The Karpark Corporation of Cincinnati 6, Ohio. It is constructed with two independently operating meter mechanisms in one housing to permit the parking of two cars at one meter, thus reducing by half the number of meter installations required, with consequent lower initial cost and lower maintenance and servicing costs.

In addition, only one standard installation is required instead of two, and the size of this standard can be either 2 or 2½ inches in diameter.

Similar in design is a companion meter for the timing of single cars, to be used at street ends and special one car locations.

Coin and time requirements in the Twin-o-Matic are easily changed on location, permitting quick adjustments to any change in parking regulation. The timing mechanism, powered to operate more than 100 hours on one winding, is entirely separate from the coin mechanism.

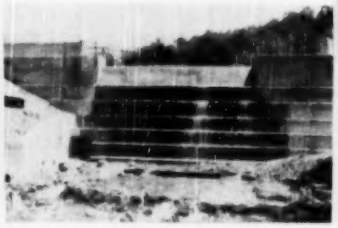
Seamless housing is constructed of a new aluminum alloy to resist damage, wear and corrosion, and to prevent tampering and pilfering.

Karpark Twin-o-Matic Meters, like the Karpark Superior and the Karpark Husky meters, are built by the Herschede Hall Clock Co., noted for the accuracy of its clocks and timing devices.

New Twin-O-Matic 2-car parking meter permits quick adjustments to parking regulation changes.

NEW!
PATHFINDER
PIPE LOCATOR
NOW TRADE-IN YOUR OLD PIPE LOCATOR
★ Powerful Precision Unit
★ Economically Priced
★ Lifetime Guarantee
PATHFINDER is today's BEST BUY! This amazing new 1950 pipe locator is FIRST with a liberal trade-in allowance for your old equipment — first with all vital features combined in one handy, compact unit.
Take advantage of this money-saving opportunity. Get the facts at once and you'll buy a PATHFINDER!
Quickly and accurately locates position and depth of pipes, tools, valves and buried tools.
Write! State model and year of locator to be traded.
PATHFINDER COMPANY
1726 Beverly Drive • Pasadena 7, California

# "GUNITE" work by Cement Gun Co. makes dam better than new



The picture, above left, shows the advanced state of disintegration that existed when we were called in to repair a 50-year-old gravity dam. After we placed a solid "Gunite" blanket on the entire upstream side, seepage through the dam stopped completely. "Gunite" treatment on the down-stream side (above right) made the dam stronger than when it was originally constructed. Throughout the operation, water was controlled so that the town's supply was not interferred with in any way.

*Many instances of repair, remodeling and new construction with "Gunite" are described and pictured in Bulletin D2400. A request on your letterhead will bring your free copy by return mail.*

**CEMENT GUN COMPANY**
"GUNITE" CONTRACTORS
GENERAL OFFICES—ALLENTOWN, PENNA. U.S.A.
MANUFACTURERS OF THE CEMENT GUN

# Does Your City Have These ELECTION PROBLEMS?

Inaccurate, Delayed Election Returns
Spoiled Ballots
Slow Laborious Voting
Expensive Recounts
Election Frauds

**If So—** Let Us Show You How More Than 5,000 Cities and Towns Have Solved These Problems Through the Installation of AUTOMATIC VOTING MACHINES

*WRITE*

**AUTOMATIC VOTING MACHINE CORPORATION**
JAMESTOWN, NEW YORK
*— SINCE 1898 —*

**"FERRO" STREET SIGNS**
*Embossed Porcelain Enamel — Permanent*
Made for the Auto Age
*Write Today for FREE Literature*

**FERRO ENAMELING CO.**
**1100—57th Avenue, Oakland 3, California**
We are interested in your Street Signs for:
City ..... State .....
Signed ..... Title .....

# Attract More Shoppers to Your Business District

Today, business districts of cities in France, England, Brazil, boast modernized white-way fluorescent street-lighting. American made Post-Lites glamorize business streets in cities as far away as Thailand and the Belgian Congo.

To municipal leaders interested in genuine white-way lighting for business attraction, we have a message of tremendous importance. Write for Bulletin 250.

Address:
W. H. Long Co., 109 W. Illinois St., Chicago 10, Ill.

**"GUNITE" CONCRETE** (Since 1915)
***SPECIALISTS IN CEMENT GUN WORK***

**RESERVOIR LININGS (NEW AND OLD) • CONCRETE AND MASONRY REPAIRS • STEEL ENCASEMENT • FIREPROOFING • STEEL COAL BUNKER, STACK, HOPPER, AND PLATE LINING • SEWER LINING AND REPAIRING • CANAL, DITCH, AND DRAIN LINING.**

**GUNITE CONCRETE & CONST. CO.**
**1301 Woodswether Road** **Kansas City 6, Missouri**

*District Branch Offices*
R. N. Turner, Dist. Mgr., 228 N. La Salle St., Chicago 1, Ill.
B. H. Mueller, Dist. Mgr., 6625 Delmar Blvd., University City (St. Louis), Mo.
Philip D. Barnard, Dist. Mgr., 2036 Addison, Houston 5, Texas.

*Branch Offices:* DENVER • DALLAS • NEW ORLEANS
*See our catalog in Sweet's*

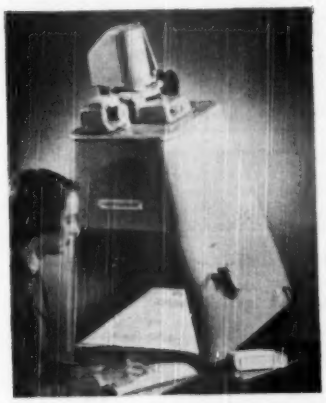
## New Medium-Priced Microfilm Reader

Microfilms of municipal records are either to be stored or to be used in place of the original records. Ease of reading, then, is essential to most efficient use. A new medium-priced microfilm reader is now available for reading type as small as newspaper. It projects both 16 and 35 mm negative or positive film, perforated or unperforated, with magnification 19 to 1.

The reader is slightly over three feet high, and occupies less than two feet square on the desk top. Weighing less than 50 pounds, it can be moved about the office easily.

To assure sharp images, comparable to the high resolution of microfilm images, a Kodak Projection Ektar Lumenized Lens, set at f/45, is used. A 100-watt prefocus lamp, available in 115, 120, and 125 volts, AC or DC, provides ample illumination for bright images.

This Model MPE reader is marketed by Recordak Corporation, 350 Madison Ave., New York 17, subsidiary of Eastman Kodak Co.



**New Recordak Microfilm Reader, a desk model, occupies less than two feet square. It projects either 16 or 35 mm. film at a fixed magnification of 19 to 1.**

### *Correction*

**The parking meters of Wellsville, N. Y., are equipped with Meter-ads supplied by Meter-Ad Corp. of America, 6 State St., Rochester, N. Y. This installation was noted on page 189 of the July 1950 issue but was incorrectly ascribed to a different meter-advertising company.**

## Measure While You Walk

The Shalda measure meter does all types of measuring while the operator walks at a comfortable clip. Guaranteed accurate to 1/10 of 1%, the mechanism adds and subtracts, measuring straight or curved lines. It has a telescopic handle that extends to measure high walls.

Invented by William Shalda, the mechanism is sold through F. D. McGirr and Associates, P. O. Box 1483, Beverly Hills, Calif.

The Model D-1 records up to 10,000 feet, adds and subtracts simply by pushing and pulling. It can be reset to zero at any time.

## Interior Alarm System For Boston Fire Dept.

The new $2,000,000 headquarters and maintenance shops of the Boston Fire Department will be protected by a completely modern automatic fire detection and alarm system. Made by The Gamewell Co., Newton Upper Falls, Mass., the system will consist of rate-of-rise temperature control equipment called the Vigilarm system, which actually can anticipate a fire: when there is an abnormal rise in the temperature an alarm is set off by expansion of air in small copper tubing attached to the ceiling.

There will be a series of 12 manually operated fire-alarm boxes located at strategic points in the three sections of the building. In addition, some 25 bells will sound alarms for warning purposes and personnel evacuation. Each of the three systems will have its own central control station with master fire-alarm box connected directly to fire alarm headquarters. Operators will respond to the particular section of the building from which the alarm was received.

## Mack Caravan Visits Mayors On 50th Anniversary Tour

As part of Mack Trucks 50th anniversary celebration, a new 1950 Model "A" truck, equipped with Magnadyne engine, will visit 19 mayors with a message from Mayor Donald V. Hock of Allentown, Pa. Mayor Hock's message calls attention to Mack's current nationwide educational campaign to inform the public of the importance of trucking, motor transport and highways to the nation's welfare.

Although Mack Trucks also has plants in New Brunswick and Plainfield, N. J., and Long Island City, N. Y., Allentown was selected for initiating this year's Golden Anniversary celebration because for years it was the original home of the company, which opened its Allentown plant in 1905.

## Ripper for Tractor Shovels

The heavy-duty ripper, manufactured by the Shaw Sales & Service Co., 5100 Anaheim-Telegraph Rd., Los Angeles 22, Calif., is designed for quick attachment to the Allis-Chalmers HD 5 G Tracto-Shovel, or it can be used with the HD 5 tractor equipped with hydraulic controlled bulldozer with front-mounted pump.

Working to a maximum depth of 15 inches, the ripper loosens decomposed granite, hard-packed earth, adobe, and old asphalt and macadam roads. Other applications are basement digging, side hill excavations, and ripping of frosted earth.

A complete unit consists of the ripper frame, four shanks and ripper points, hydraulic cylinder, hose and fittings, and attachment bolts. The frame is built to take up to seven ripper shanks. Setting the ripper to the desired operating depth or lifting clear for transport is by hydraulic lever control from the operator's seat.

# Pipe Laying Is A "Cinch"

When Using

## McWANE 2" THREADED

**CAST IRON PIPE**

The Oversize Joint is easily and quickly laid. All you need to do is "Screw 'em together." Long 18-foot lengths speed up pipe laying.

Complete line of fittings.

*Pipe Sizes 2" thru 12"*

**McWANE CAST IRON PIPE CO.**
Birmingham, 2, Alabama

---

***THE ANSWER TO THE ENGINEER'S PRAYER***

**BREAKS CONCRETE FASTER**

**TAMPS BACKFILL BETTER AND FASTER FOR LESS**

**THE NEW, MORE POWERFUL**

## MIGHTY "B" MIDGET

Stronger construction, greater hitting force, increased mobility and easier operation are a few of the many improvements of this great new pavement breaker. Actual performance records under the toughest conditions show that this machine has a capacity of breaking 12" concrete. Operates on either 105 or 160 C. F. M. Compressor. Conventional Automotive rear end drive—equipped with 710 x 15 tires—manual or automatically operated.

*Write for Complete Information to Dept. D*

**R. P. B. CORPORATION**
2751 East 11th Street • Los Angeles 23, California

---

*Newly Improved*
**OK CHAMPION POWER SEWER CLEANER**

## DON'T LOSE Sewer Capacity

Clear your sewer lines regularly. Keep up full carrying capacity and you save money—in lower maintenance cost and avoiding costly backwash. Order OK Champion Power Sewer Cleaner equipment and your men remove roots, dirt and other obstructions from any storm or sanitary sewer in ONE operation. All men work above street level.

OK Champion cleaners are regularly clearing sewers all over the world. New improvements make them better than ever. Send for literature.

CHAMPION CORPORATION
Hammond, Indiana

**GET FULL FACTS NOW!**

CHAMPION CORPORATION, 4716 Sheffield Ave., Hammond, Ind.
Please send information on how the Improved OK Champion Power Sewer Cleaner cuts sewer cleaning costs.

NAME..... TITLE .....

ADDRESS.....

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# LEADITE

**FOR JOINTING CAST-IRON WATER MAINS**

***Melted and Poured — No Large Bell-holes to Dig — Saves at Least 75%***

Leadite is shipped in powder form, packed in sacks of 100 lbs. net each. Leadite tested and used for over 50 years • Leadite joints improve with age.

***Be sure it is Leadite and accept no imitations***

**THE LEADITE COMPANY**
Girard Trust Co. Bldg., Philadelphia 2, Pa.

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470 FOURTH AVE.,
NEW YORK 16, N. Y.

Is Information Headquarters

for municipal, waterworks officials, and engineers wanting further details on printed matter from the manufacturers advertising in these pages. Our Reader Service Department will be glad to forward any literature or special requests you mail to us at the above address.

THE AMERICAN CITY

## Lull Adds to Shoveloader Models

The Lull Mfg. Co., 3612 E. 44th St., Minneapolis 6, Minn., has added two new models to its Shoveloader line. Designed for installation on tractors with mowers, the Model 3-AM is built exclusively for use on the Case VAI tractor using either the Case-Detroit 16 or VAI-5 mower attachment, and the Model 4-AM is built for the Minneapolis-Moline RTI tractor with the M-M SMRI mower.

Constructed so that either the Shoveloader or the mower operates independently, neither needs to be removed from the tractor when the other is being used.

The 3-AM has an 1,800-pound lifting capacity and a 7½-foot dumping clearance. The Model 4-AM has a 2,500-pound lifting capacity and an 8½-foot dumping clearance.

## Hine Named Sales Manager

Charles R. Hine has been appointed general sales manager for the Wood Mfg. Co., 6900 Tugunga Ave., North Hollywood, Calif., manufacturers of Wood roadmixing equipment.

C. R. Hine

Mr. Hine has had thirty years of experience in the sales and merchandising of heavy construction equipment, including sales direction for the H. W. Moore Equipment Co. of Denver. Recently he was vice-president and sales manager of the Le Roi-Rix Machinery Co. of Los Angeles.

## Mischke New Export Manager

The Allis-Chalmers Mfg. Co., Milwaukee 1, Wis., has appointed Floyd J. Mischke as export manager of the company's tractor division.

F. J. Mischke

With Allis-Chalmers since 1930, Mr. Mischke succeeds M. J. Proud, who died recently. Mr. Mischke has been in the export department for the past thirteen years.

## Dieterich Retires From Ryerson Steel

V. H. Dieterich, vice president and director of Joseph T. Ryerson & Son, Inc., Chicago 80, Ill., steel warehousing concern, has retired after more than 45 years with the company. He had resigned his office in 1949 and for the past year acted in a consulting and advisory capacity.


IT'S A REAL "GULLEY-WASHER"
STANDARD STEEL FLUSHER

TRUCK MOUNTED FLUSHERS
STREAMLINED FOR CIVIC PRIDE

T. F. TRACTOR FLUSHER CAN BE USED FOR FIGHTING FIRES AS WELL AS STREET CLEANING!

★ MODERN TO THE MINUTE
STANDARD STEEL FLUSHERS (both Tractor and Truck mounted) are built for heavy duty as well as "styled to the minute" like the finest motor cars!

★ HI-TENSION STEEL THROUGHOUT
STANDARD STEEL FLUSHERS are built of Hi-Tensile Steel—4 to 6 times less corrosive than blue annealed steel. Saves 15 to 20% dead weight.

★ 50 LBS. PRESSURE ON EACH NOZZLE
You get a hurricane "GUTTER to GUTTER" wash from any Standard Steel Flusher. (Comes in both front and rear engine mounted.) The 350 G.P.M. Pump and 20 H.P. engine on the Tractor Flusher makes this equipment an excellent piece of auxiliary fire fighting equipment. Write for FLUSHER catalog today.

Built to the Highest Standard

OTHER PRODUCTS
Asphalt Pressure Distributors, Maintenance Distributors, Tar Kettles, Patch Rollers, Supply Tanks, Tool Heaters, Asphalt Tools, Construction Brooms.

Standard Steel Works NORTH KANSAS CITY MO

# Top companies are "Sold" on
# REEVES ARMY TWILL

## For Smarter Appearance
## Longer Wear • Better Morale

Progressive companies—like Spur—are alert to the importance of smart uniforms for their employees. That's why more and more leading firms specify Reeves Army Twill. They know that this famous fabric means greater economy through longer wear. It's extra-durable because it's made only of the highest quality cotton . . . Sanforized* and vat-dyed in colors that are fast to sun, water and perspiration.

Make sure your men look *right* on the job. Insist on Reeves Army Twill when you buy.

*Residual shrinkage less than 1%

Uniform illustrated is made for SPUR by the Turner Mfg. Co., Nashville, Tenn.

**REEVES BROTHERS, INC.** 54 WORTH STREET, NEW YORK 13, N. Y.

REPRESENTATIVES IN: *Akron • Atlanta • Boston • Chicago • Dallas • Los Angeles • Philadelphia • Portland, Oregon • St. Louis • Montreal • Toronto*

## Triple Combination Pumper

**This 750-1,000 gpm custom-built triple combination pumper with semi-cab has an enclosed multi-stage pump and such standard equipment as 1,500 feet of 2½-inch hose body, 200-gallon booster tank, ladders, suction hose, extinguishers, pike, pole, axe, crow bar, hand lanterns, tool compartments, booster reel with hose and nozzle, and a complete complement of siren and lights. The manufacturer is the Oren-Roanoke Corp., Roanoke 16, Va.**

## A No-Slam Check Valve

The Cla-Val Co., Alhambra, Calif., has designed a check valve, No. 81, which is designed primarily for handling water, oil, air, and some gases, but which can also be furnished with special disc and diaphragm material to handle other types of fluids.

Constructed to open and close at a controlled rate for all normal requirements, the valve can be furnished with needle valves or a Surgemaster control to vary the speed of opening and closing. Within its pressure and temperature limitation, this check valve offers positive pipe line protection against water-hammer. There are no hinged parts to stick or break, nor are there any fast moving parts to flutter and cause pulsations in the line. Because this valve has no outside stuffing boxes or packing glands, there is no possibility of leakage of the fluid to the atmosphere.

Within temperature limits of 200° F. and working pressures not exceeding 300 pounds, the No. 81 check valve is recommended for installations in conjunction with centrifugal or turbine pumps when surges and shocks must be held to a minimum. The valve also has wide usage in handling compressed air, compressed and liquefied gases of many kinds, solvents, and other hard-to hold fluids in which the need for bubble-tight closing is the primary consideration.

The valve is entirely hydraulic in operation, utilizing the full line pressure to open and close. Because it is entirely hydraulic, it may be installed in either a horizontal or vertical position. It is available in both a 150- and a 300-pound class in sizes ⅜ to 3 inches with screwed ends, 2 to 16 inches flanged.


**A BETTER BUILT MIXER** *means Greater Saving!*

- 3 cu. ft. in 30 seconds
- High output for low investment
- Handles any mix
- Fully portable

ASPHALTIC Mixes cannot be handled like concrete. Ordinary mixers deliver poor mixes and waste asphalt.

The Foote Kinetic Mixer is a high quality, dependable unit, capable of the accurate delivery of asphaltic mixes and taking the punishment of continuous service. The new and unusual mixing principle assures complete coating with minimum quantities of asphalt and will give you 8 to 10 more batches out of every barrel of asphalt. You cannot get efficiency from ordinary methods. Savings will soon pay for this mixer. Ask for bulletin K-100.

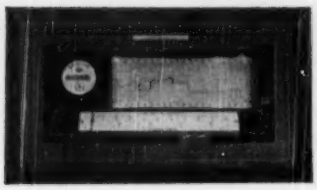
the FOOTE Kinetic mixer

THE FOOTE CO., INC.
Subsidiary of Blaw-Knox Co.

1958 State St. • Nunda, New York A BLAW-KNOX PRODUCT



**SPARLING MAIN-LINE METERS**



When you install this Sparling Indicator-Totalizer-Recorder where you can keep your eye on it, you KNOW what is going through the Sparling-metered distribution or pump line, with records of operations up to 60 days!

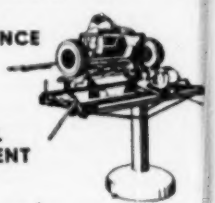
*Bulletin 310 comes on request*

Sparling Meter Company
LOS ANGELES — CHICAGO — CINCINNATI
NEW YORK - BOSTON
SEATTLE - DALLAS



THE MODERN LAWN MOWER SHARPENER

CUTS MAINTENANCE COSTS
•
LOWER CAPITAL INVESTMENT
•



*Economically and Quickly Sharpens All Municipal Mowers*

Price $241.50 (less motor)

Sharpens All Reel Type Mowers • Hand, Power or Gang • 10 to 30 Minutes • No Dismantling No Extra Attachments Needed

All reel type mowers, from 8-inch edgers to 36 inch power mowers, are quickly sharpened to extreme ends of both left and right twist reel blades. Handle, wheels, roller and motor repair in place when sharpening is in process. Bed knife is sharpened in same brackets that hold mower in grinding position. No extra attachments required. One lever puts mower or bed knife in grinding position. 100% steel construction. Grinding head rides on five ball bearing races. Small, compact, easy to operate. Sharpens wood chisels, jointer knives and planer blades without extra attachments. Skate Sharpener Attachments available.

1/3-hp. G.E. 60-cycle Motors now available—$21.50 extra.

Send for Free Bulletin No. 258

ORDER NOW • IMMEDIATE DELIVERY

MODERN MFG. CO.
140 N. FAIR OAKS AVE. • PASADENA 1, CALIF.

# Automotive Shovel With Hydraulic Crowd and Hoist Speeds Up Excavation Work

## Unit Reduces Excavation Costs; Loads Up To One Cubic Yard A Minute

MOVING SHOVEL LOADERS to and from jobs is one of the most expensive unproductive costs in excavation work. Contractors lose hundreds of hours and spend thousands of dollars annually moving this equipment. Developments since the war show that contractors can be relieved greatly of these costs. One of the most successful developments has been the manufacture of the rubber-tired Dempster-Diggster shovel loader that travels at truck speeds.

THE DEMPSTER-DIGGSTER is shown here digging out a 15 foot bank of hard chert. The power crowd permits bucket to keep digging until loaded . . . no digging with wheels.

### Digs Through 15 Foot Bank

Construction men have found that on big jobs the Dempster-Diggster has no equal for working in tight places and for freeing big shovels for heavier work. The Diggster has an 8 foot 10 inch crowding reach, will dig through a 15 foot bank, and will dig 15 inches below grade.

Manufacturer's tests and contractor's reports show that the Diggster will load up to one cubic yard a minute. This speed in excavation is accounted for, mainly, by the Diggster's exclusive independent hydraulic crowd and hoist action, the hydraulic steering, and wheel-type traction.

The power crowd permits bucket to keep digging until loaded . . . no digging with wheels. The hydraulic steering gives the driver sensitive, finger-tip control. When accelerated, a one-handed twist of the steering wheel puts the machine in any desired position. By operating on rubber-tired wheels, the Diggster, of course, can move at the fastest possible speed.

ENCLOSED STEEL CAB protects operator against inclement weather.

### Not A Fair Weather Machine Only

Under adverse conditions on a state highway near Charleston, W. Va., recently, the Diggster loaded 150 cubic yards of sticky blue clay in only three hours. The work consisted of cleaning up slides on 14 foot embankments on both sides of a concrete road. The weather was not cooperative, inasmuch as considerable rain fell the night before. But the Diggster showed no tendency to slide. The job foreman stated that it loaded more material in two hours than the ⅜ and ½ cubic yard truck shovels normally did in an entire day. This and many other operations in inclement weather have proved that the Diggster is not a fair weather machine only.

The Dempster-Diggster has a 15 foot turning radius, is 20 feet long when bucket is in traveling position, and is nine feet and six inches in height.

Four standard interchangeable buckets of two types are available. Digging buckets with four bottom teeth in 1 and 1¼ cubic yard (heaped) capacities. Materials handling buckets in 1½ and 2 cubic yard (struck) capacities.

### Crawler Traction Available

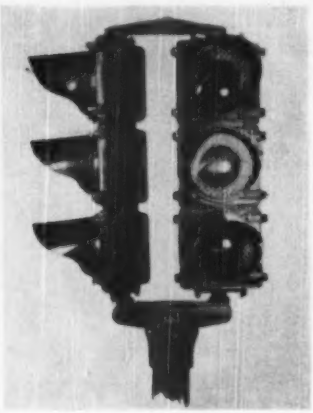
For fast, efficient operation in difficult terrain, the Diggster is available with crawler-type traction.

Complete information and prices may be obtained by writing the manufacturer, Dempster Brothers, Inc., Knoxville, Tenn.

DEMPSTER DIGGSTER

**DEMPSTER BROTHERS**
**880 Dempster Bldg.,**
**Knoxville 17, Tenn.**

## Alumalloy Traffic Signals Resist Weathering Damage



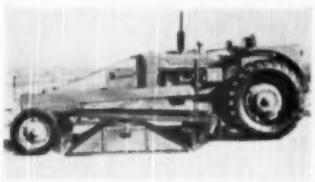
**This unit is adjustable, 2-direction, 3-light, signal-pole mounted.**

The Killark Electric Mfg. Co., St. Louis 13, Mo., makes a line of non-corrosible Alumalloy traffic signals that comes in both adjustable and fixed styles.

The fixed type are four-way one-piece units; the adjustable models are made of single, self-contained signal sections. A single section, or complete signal faces of two or more sections, can be made up for one to four directions. Since all sections mesh and are interchangeable, adding sections is no problem.

Standard signal colors are green or signal yellow, and other colors can be obtained on request. The signals are post-mounted, span-wire mounted, and horizontal or vertical bracket mounted.

## Heater-Planer Improves Asphalt Streets

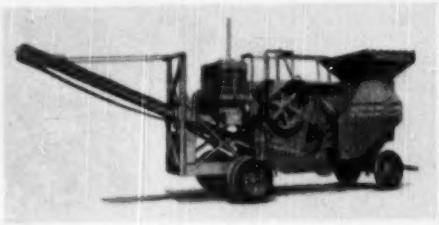


A new asphalt road planer, the Model 31, manufactured by the Asphalt Maintenance Co., 41 Park Row, New York 7, N. Y., is designed to improve the resurfacing and renovation of old asphalt pavements by planing down asphalt street irregularities. The machine is powered by an International gasoline engine with electric starter, generator, battery, oil bath air cleaner, heat indicator, and oil-pressure gauge.

This is the first time that asphalt surfacing equipment of this type has been offered for sale by this manufacturer. Heretofore, it has been available for lease only.

## Crushing for Coarse-Graded Fines With New Portable Crushing and Screening Plant

The new "61" portable crushing and screen plant was designed by the Austin-Western Co., Aurora, Ill., for the production of crushed rock or gravel where extreme accuracy in size-grading is not required. The lightweight and readily portable "61" can be moved quickly to any location.

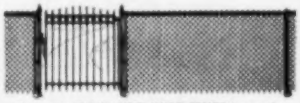



Stewart PRODUCTS

FOR PUBLIC PROPERTY

Here are a few of a wide range of high-quality products Stewart manufactures for the protection and beautification of all types of public property. There are many more. So if the product you need is made of iron, wire or bronze, it will pay you to write us.

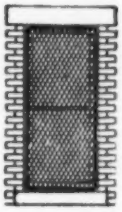
FLAGPOLES—Made of full weight standard pipe, heavily galvanized. Furnished with pulley, but not rope. When writing for prices please give desired height above ground line.



Stewart CHAIN LINK WIRE FENCE is made in several styles, heights and weights, with or without arrangement for barbed wire overhang. Style OTM with iron gate is illustrated.

WIRE MESH PARTITIONS — Sectional—fit any space—easily and quickly erected. Ideal for locker rooms, storerooms, toolrooms, etc.

Stewart IRON PICKET FENCE is available in an unusually wide range of designs and in plain or ornamental iron. Walk and drive gates are made to match line of fence.



WINDOW GUARDS (wire or iron) in standard or special sizes to fit any size or shape opening. When requesting prices please send sketch and give all measurements.

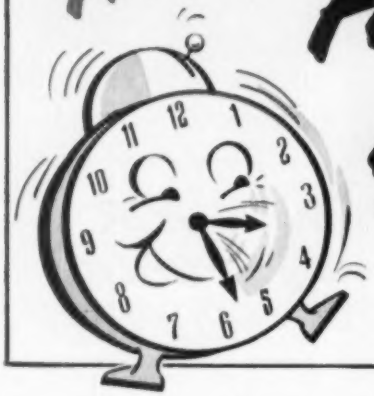
No. 370 SETTEE—Comfortable, attractive, long-lasting. Framework is galvanized after fabrication for maximum resistance to rust. Wood slats painted green. Made in 4', 5' and 6' lengths. Prices on request.

Other products: Iron Railings, Steel Folding Gates, Ornamental Iron Lanterns, Grilles, Bronze Plaques, etc. When requesting literature, please mention products in which you are especially interested. This enables us to send correct catalogs

Stewart IRON and WIRE FENCES

The Stewart Iron Works Co., Inc.
1721 Stewart Block, Cincinnati 1, Ohio
Experts in Metal Fabrication Since 1886

# FASTER! FASTER! FASTER!



## The Permutit® Spiractor®—last word in Cold Lime Soda Treatment—softens water in EIGHT MINUTES!

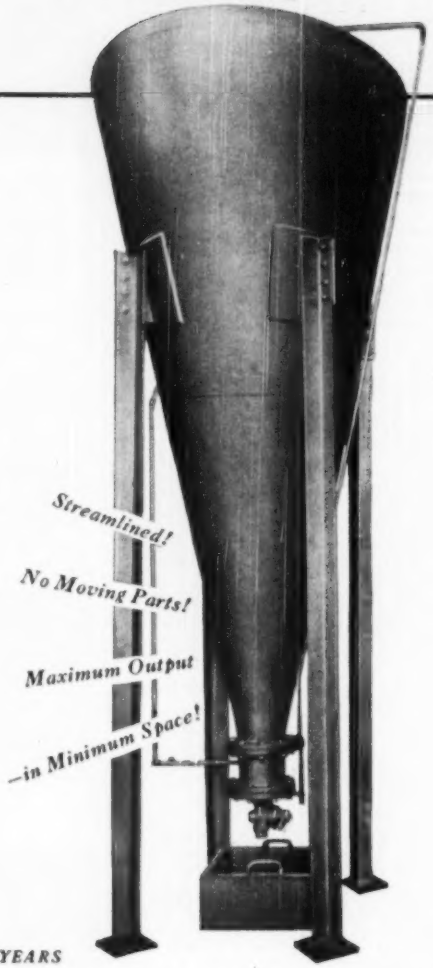
The Spiractor softens water up to 20 times faster than previous cold lime soda methods. That means you can cut your space requirements to a minimum!

Operation of the Spiractor is simple and sure: Hard water and the required lime enter at the base of the cone at a flow rate strong enough to suspend a catalyst bed of calcium carbonate granules without any carryover. The treated water is given a swirling, upward motion by being admitted tangentially to the cone.

The water softening reaction results in precipitates which are deposited on the catalyst granules by accretion. The enlarged granules are drawn off by a valve at the base.

The effluent is soft water that has a low alkalinity content and is suitable for any desired filtration.

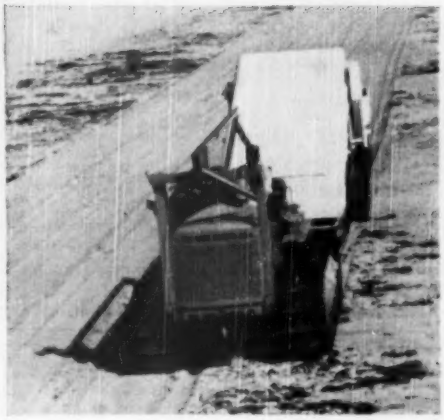
Write for full information to The Permutit Company, Dept. AC-8, 330 West 42nd Street, New York 18, N. Y., or to Permutit Company of Canada, Ltd., Montreal.




Permutit

*WATER CONDITIONING HEADQUARTERS FOR OVER 36 YEARS*

## For Clean Beaches



Shown here in operation on a California beach, the Beach Sanitizer made by Sanitized Beaches, Inc., Aurora, Ill., screens the sand and picks up debris ranging anywhere from refuse to small pieces of broken glass. Various sizes of screen may be used with the mechanism, which travels 1½ miles per hour.

## New Design Trash Cart

A new street cleaning cart, the Model P Trash Cart, has been designed by the W. E. Grace Mfg. Co., 6000 S. Lamar St., Dallas, Tex. Constructed of steel, the 18-gallon can is 18 inches in diameter and 30 inches high. Carrying 10 by 2.75 zero pressure tires, the cart has roller bearing wheels with ball bearing caster wheel. Extra cans are available.

## A Permanent Traffic Safety Line

The Perma-Line process consists of incrustating the road with a hot thermoplastic filler which, after cooling, becomes an integral part of the concrete, asphalt, or macadam road. By changing the ratio of chemicals of the filler, the coefficient of expansion and contraction of Perma-Lines can be adjusted to be identical with that of the road.

Impervious to pounding, absorption of moisture, or chemical reaction from rock salt, the line is level with the road so that a snow-removing plow will not scoop it out. The line wears off at the same rate as the road and has about the same traction as cement roads.

Since rubbing by tires acts as a polisher, the Perma-Lines remain visible; white, yellow, or any other color may be installed in widths from 2 to 6 inches, broken or continuous, at the rate of one mile per 8-hour shift. The process is that of the Perma-Line Corp. of U. S., 10 W. 47th St., New York 19, N. Y.

## Cooper-Bessemer Executive Wins Honorary Doctorate

Hewitt A. Gehres, executive vice-president and director of engineering of the Cooper-Bessemer Corp., Mt. Vernon, Ohio, was recently given the honorary degree of Doctor of Science by the Grove City College, Grove City, Pa.

In his 40 years of service with Cooper-Bessemer, Mr. Gehres has become well-known for his contributions to the field of large compressors, gas and diesel engines, and such allied machinery as marine drives.


PIPE FITTINGS

Warren fittings, like Warren pipe, are made in all sizes and to all standard patterns for use with cast iron pipe of standard designs.

Special castings to meet your individual requirements may make use of our large stocks of non-standard patterns.

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TEMPO AIR STRIPE is made in white only.
Packed in 25-lb. cartons.
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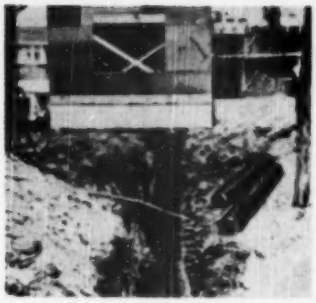
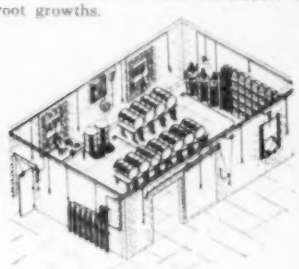


## Drain Lines of Fiber Pipe

The fibre pipe made by the Line Material Co., Milwaukee 1, Wis., may be used for drainage, for sewer pipe and filter beds. The pipe is manufactured from cellulose wood fibres which do not delaminate or flake. Then the tube is impregnated with coal-tar pitch, a chemically inert product with a high melting point.

The crushing strength of L-M fibre pipe exceeds that of standard, farm, or extra quality tile. It will not crack from traffic shocks or soil settlement. Inorganic acids, alkalies, inorganic salts, organic material, and wastes have little or no effect on the pipe even when combined with considerable quantities of abrasive matter. The pipe is highly resistant to water and infiltration of root growths.



## Extinguish Fires With New System

The new carbon dioxide fire extinguishing system available from the American-LaFrance-Foamite Corp., of Elmira, N. Y., automatically sounds a warning when a fire hits, stops motors, closes windows, shuts off fans, closes doors, and puts out the fire. It is of value for gasoline, oil, paint, varnish, and Classes B and C electrical fires, and it stops Class A fires in closed storage vaults.

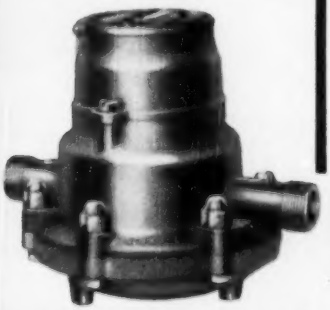
The battery and operating equipment can be located at, near, or remote from a fire risk. Additional cylinders may be added at any time, and the release system may be automatic, manual, or both. At the outbreak of fire, the Alfco gas release mechanisms pour out a flood of carbon dioxide gas, choking flames quickly without damage to valuable records, files, and papers. The gas is completely dry and leaves no residue.

**The Mine Safety Appliances Co., Pittsburgh, Pa., recently dedicated its John T. Ryan Memorial Laboratory, which is the world's largest research laboratory devoted exclusively to the development of safety equipment. Among the mechanisms developed by the company are respirators for protection against hazardous dusts and fumes, gas masks, protective hats, gas warning and detection instruments, underground lighting systems, and rescue and protective apparatus.**

## A New Research Laboratory

AMERICAN (Bronze Case) WATER METERS
NIAGARA (Galv. Iron Case) WATER METERS

Water systems in cities, towns and villages throughout the nation are saving money and increasing their revenue through the use of Buffalo AMERICAN Meters. Maintenance costs reflect the simplicity and absence of unnecessary parts, so Buffalo Meters provide full meter earnings at lowest cost per thousand gallons.



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Operating on the principle of the seismograph, the Globe Geophone is without question the most sensitive and reliable instrument for detecting underground leaks.

Complete Geophone outfit consists of connecting tubes, two Geophone discs, headpiece, and heavy leather-covered carrying case with shoulder strap ..... **$85**

**Pipe Phone .....$3.70**
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*Manufacturers of Geophones Since 1918*



# Borough Manager Wanted

The Borough Council of Lewistown, Pennsylvania, invites applications for the office of Borough Manager until January 2, 1952. Ordinance requires manager to serve as Borough Engineer and to be a Registered Engineer or Surveyor in Pennsylvania. State education, experience and salary expected.

Formal application blanks and additional information may be secured by addressing The Borough Secretary, Borough of Lewistown, Lewistown, Pennsylvania.

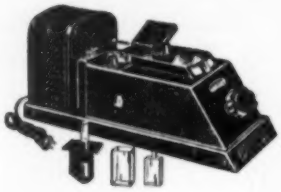
Applications shall be in the possession of the Borough Secretary on or before August 15, 1950.

JOHN H. IMMEL
Borough Manager-Secretary



# KLETT SUMMERSON ELECTRIC PHOTOMETER

***Adaptable for Use in Water Analysis***



Can be used for any determination in which color or turbidity can be developed in proportion to substance to be determined.

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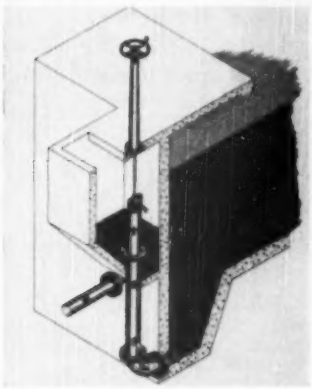
## Telescoping Sludge Valve Improves Sewage Plant Work

A telescoping sludge control valve designed by the American Well Works, Aurora, Ill., provides visible control of the quality and quantity of sludge withdrawn from the hoppers of a settling tank—without breaking through the sludge blanket and drawing liquid of low solids content.

Sludge is forced by hydrostatic pressure from the tank sludge hopper through an adjustable slip pipe of the sludge valve into a sludge well, from which it is pumped into the digester or returned to the process.

The control valve is mounted so that the discharge can be observed as the sludge is being drawn into the sludge well. As a result, concentrated sludge —not sewage—is delivered to the digester. Less digester supernatant is produced and returned to the process, eliminating supernatant overloading. Operating costs for sludge removal are reduced by the savings in pump operating time, wear, and maintenance on equipment, and the work of operating personnel.

Standardized in 4-, 6-, and 8-inch sizes, but with 10- and 12-inch sizes available, the control can be obtained with indicating mechanism if desired.



A typical installation view.

## Elreco Gets Contract

The Elreco Corp., Cincinnati, Ohio, manufacturer of lighting poles and accessories, has been awarded the contract for manufacturing floodlight standards with safety service platforms for Rice University, Rice Stadium, Houston, Texas. The new equipment will include ten standards, 40 feet high; six standards, 60 feet high; two service platforms on each of the sixteen standards.

## Incinerator Institute Formed

The Incinerator Institute of America, with offices at 420 Lexington Ave., New York 17, N. Y., was formed recently for the purpose of furnishing accurate and impartial information on the products of its industry.


**The Cotton Bowl in Dallas**

**. . . Protected by Cyclone Fence**

To protect valuable property . . . guard the safety of patrons . . . and facilitate control of admissions—the municipal engineers responsible for the new section of the famous Cotton Bowl made extensive use of Cyclone Fence. The nearly two-thirds of a mile of Cyclone Fence that lines the ramps leading to the upper deck prevents disaster from a misstep during a football crush. The complete set of entrance gates makes handling of admissions quick and efficient no matter how great the crowd. And the 8-foot barbed-wire-topped enclosure fence keeps unwanted guests outside.

This is just one example of how progressive civic authorities are using Cyclone Fence on all sorts of municipal projects. Whatever your problem may be—to restrict children to a safe playground—guard a power plant—fence a zoo—regulate park admissions—there is a Cyclone Fence perfectly engineered to handle the job . . . and a Cyclone erection crew specially trained to assure the best possible installation.

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***Cyclone is the trade-mark name of fence made only by Cyclone Fence Division. Accept no substitute.***

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# The American City

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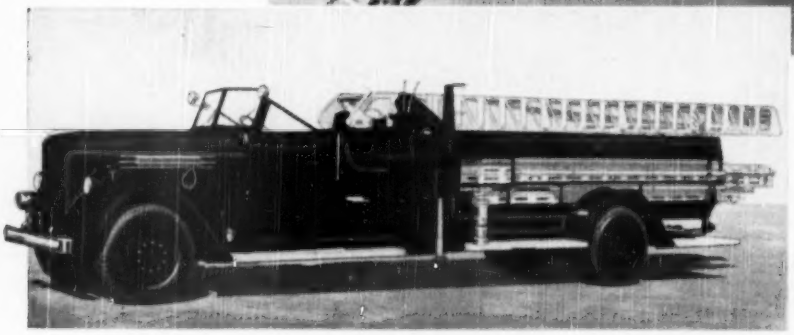

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The wide range and variety of lengths available in Pirsch Aerial Ladders permits selection of a "tailor-made" ladder to fit your specific problem or condition.

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*The 75′ Pirsch Intermediate Aerial Ladder Truck shown above has been delivered to City of Indianapolis.*

**PETER PIRSCH & SONS CO.** KENOSHA, WIS.

BUILDERS OF AMERICA'S FIRST ALL-POWERED AERIAL LADDER TRUCK
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# Cincinnati Case History

## City of Cincinnati

DEPARTMENT OF WATER WORKS
FILTRATION PLANT
6000 KELLOGG AVENUE
CINCINNATI 26, OHIO

W. R. KELLOGG
CITY MANAGER

C. EBERLING, Supt.
E. B. EVANS
SUPERVISOR OF
WATER PURIFICATION

Cincinnati's Experience
With
Break-Point Chlorination

Cincinnati, Ohio started Break-Point Chlorination on February 10, 1949 by pre-chlorinating the raw Ohio River water-the source of its supply.

After one year of this treatment we have accomplished:

1. A great reduction in taste and odor complaints.
2. Entire elimation of presumptive gas forming and Colifors bacteria at the plant.
3. Reduction in the number of filters washed: 10,287 washed in 1948—8,917 washed in 1949
4. Period of service of filters greatly increased.
5. A larger chloramine residual leaving the plant than we formerly were wont to carry.

At the present time we have not realized any savings in the cost of chemicals. This is primarily due to the type of water we must treat. Since the raw water has a low alkalinity the additional use of chlorine must of necessity call for soda ash treatment and therefore additional cost.

Regardless of the cost we feel that the efforts expended to install and maintain the Break-Point process of chlorination has been unquestionably justified.

Yours very truly,

CINCINNATI WATER WORKS

E. B. Evans
Sup'vr. of Water Purification

From: E. B. Evans

Exterior view, chlorinator house at the Cincinnati Filtration Plant.


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